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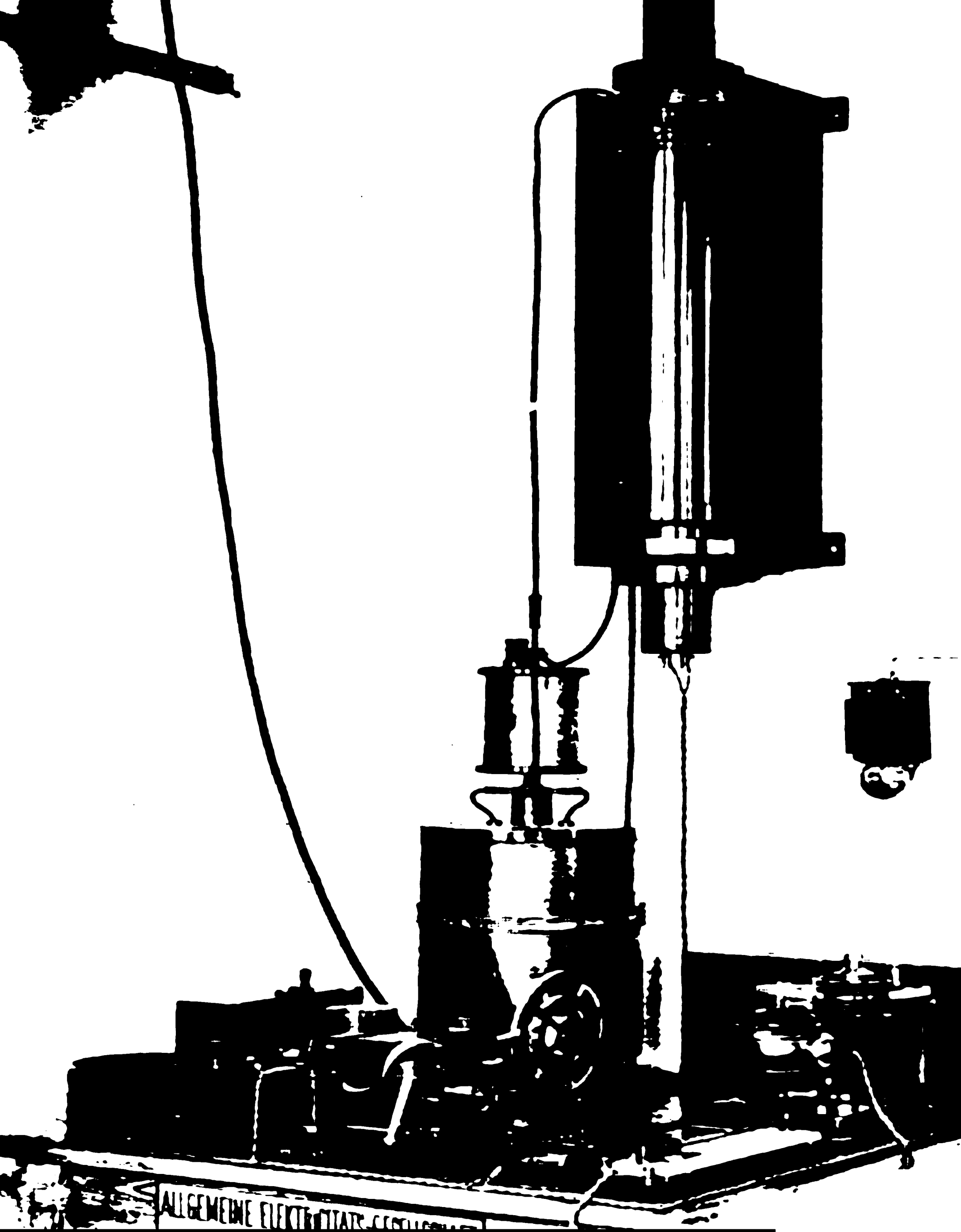

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PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE.*

The publications of the Bureau of Foreign Commerce, Department of State, are:

I.—COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—CONSULAR REPORTS, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

III.—ADVANCE SHEETS, CONSULAR REPORTS, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

IV.—EXPORTS DECLARED FOR THE UNITED STATES, issued quarterly, and containing the declared values of exports from the various consular districts to the United States for the preceding three months. There is also issued an annual edition of Declared Exports, embracing the returns for the fiscal year.

V.—SPECIAL CONSULAR REPORTS, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued by the Bureau prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880–81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885–86 (a portion of this work was published as CONSULAR REPORTS No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all these publications except Tariffs in Central America, etc., are exhausted and the Department is, therefore, unable to supply copies.

In 1890, the Department decided to publish reports on special subjects in separate form, to be entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Files in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Stave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

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* Formerly Bureau of Statistics. Name changed to Bureau of Foreign Commerce by order of the Secretary of State, July 1, 1897.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia, Africa, Australasia, and Polynesia. Supplement (1900). Tariffs of Chile and Nicaragua.

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Vol. 19 (1900).—Paper in Foreign Countries; Uses of Wood Pulp.

Vol. 20 (1900).—Part I. Book Cloth in Foreign Countries, Market for Ready-Made Clothing in Latin America, Foreign Imports of American Tobacco, and Cigar and Cigarette Industry in Latin America. Part II. School Gardens in Europe. Part III. The Stave Trade in Foreign Countries.

Vol. 21 (1900).—Part I. Foreign Markets for American Coal. Part II. Vehicle Industry in Europe. Part III. Trusts and Trade Combinations in Europe.

Vol. 22 (1900 and 1901).—Part I. Acetic Acid in Foreign Countries. Part II. Mineral-Water Industry. Part III. Foreign Trade in Heating and Cooking Stoves.

Vol. 23 (1901).—Part I. Gas and Oil Engines in Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Cotton Textiles in Foreign Countries, Files in Spanish America, Fire and Building Regulations, Fruit Culture, Gas in Foreign Countries, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Port Regulations, Refrigerators and Food Preservation; Sericulture, etc.; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

There was also published, in 1899, Proclamations and Decrees during the War with Spain, comprising neutrality circulars issued by foreign countries, proclamations by the President, orders of the War and Navy Departments, and war decrees of Spain.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications of the Bureau available for distribution, copies are mailed to applicants without charge. In view of the scarcity of certain numbers, the Bureau will be grateful for the return of any copies of the monthly or special reports which recipients do not care to retain. Upon notification of willingness to return such copies, the Department will forward franking labels to be used in lieu of postage in the United States, Canada, the Hawaiian Islands, Porto Rico, and Mexico.

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In order to prevent confusion with other Department bureaus, all communications relating to consular reports should be carefully addressed, "Chief, Bureau of Foreign Commerce, Department of State, Washington, U. S. A."

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston made the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to $20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States."

The following statements, running from January 1, 1874, to July 1, 1902, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1898, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1875–1877, 1879–1882, 1884–1887, 1895, and 1897 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic	Gold and silver	Peso	$0.96,5	Gold—argentine ($4.82,4) and ½ argentine; silver—peso and divisions.
Austria-Hungary*	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
British Honduras	do	do	1.00	
Chile	do	Peso	.36,5	Gold—escudo ($1.25), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Costa Rica	do	Colon	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centisimos.
Cuba	Gold and silver	Peso	.92,6	Gold—doubloon ($5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Ecuador †	do	Sucre	.48,7	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
India ‡	Gold	Rupee	.32,4	Gold—sovereign ($4.8665); silver—rupee and divisions.
Italy	Gold and silver	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan §	Gold	Yen	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	do	Dollar	1.00	
Netherlands	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Peru ‖	do	Sol	.48,7	Gold—libra ($4.8665); silver—sol and divisions.
Portugal	do	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia ¶	do	Ruble	.51,5	Gold—imperial ($7.718) and ½ imperial ($3.80); silver—¼, ½, and 1 ruble.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway.	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	do	Peso	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

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* The gold standard went into effect January 1, 1900 (see Commercial Relations, 1899, Vol. II, p. 7). Values are still sometimes expressed in the florin, which is worth 2 crowns.

† Gold standard adopted in November, 1900. (See CONSULAR REPORTS No. 225, June, 1899.)

‡ For an account of the adoption of the gold standard, see CONSULAR REPORTS No. 238, p. 359.

§ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

‖ Gold standard adopted October 13, 1900.

¶ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896–97, p. 254.

B.—*Countries with fluctuating currencies, 1874–1898.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1878.	1883.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin	$0.47,6	$0.45,3	$0.40,1	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.81,2	.69,9	.68	.85
Central America	do	Peso	.96,5	.91,8	....	.69,9	.68	.85
China	do	Haikwan tael	1.61	....	....	....	....	....
Colombia	do	Peso	.96,5	.96,5	.81,2	.69,9	.68	.85
Ecuador	do	do	.96,5	.91,8	.81,2	.69,9	.68	.85
Egypt †	Gold	Pound (100 piasters).	....	4.97,4	4.90	4.94,3	....	....
India	Silver	Rupee	.45,8	.43,6	.38,6	.32,2	.32,3	.40,4
Japan	Gold	Yen	.99,7	.99,7	....	.99,7	.99,7	.99,7
	Silver		....	....	.87,6	.75,3	.73,4	.91,7
Mexico	do	Dollar	1.04,7½	.99,8	.88,2	.75,9	.73,9	.92,3
Netherlands‡	Gold and Silver.	Florin	.40,5	.38,5	....	....	....	....
Peru	Silver	Sol	.92,5	.91,8	.81,2	.69,9	.68	.85
Russia	do	Ruble	.77,17	.73,4	.65	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.73,3	.63	.61,4	.76,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1891.	1892.	1893.	1894.	1896.	1898.
Austria-Hungary*.	Silvei	Florin	$0.38,1	$0.34,1	....	....	....	....
Bolivia	do	Boliviano	.77,1	.69,1	$0.61,3	$0.51,6	$0.49,1	$0.42,4
Central America	do	Peso	.77,1	.69,1	.61,3	.51,6	.49,1	.41,4
Colombia	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Ecuador	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
India	do	Rupee	.36,6	.32,8	.29,2	.24,5	.23,3	.20,1
Japan§	do	Yen	.83,1	.74,5	.66,1	.55,6	.52,9	....
Mexico	do	Dollar	.83,7	.75	.66,6	.56	.53,3	.46
Peru	do	Sol	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Russia§	do	Ruble	.61,7	.55,3	.49,1	.41,3	.39,3	....
Tripoli	do	Mahbub of 20 piasters.	.69,5	.62.3	.55,3	.46,5	.44,3	....

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* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (see CONSULAR REPORTS No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

§ See footnote, table of fixed currencies.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1899.				1900.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.43,9	$0.43,4	$0.44,3	$0.43,6	$0.42,7	$0.43,6	$0.43,8	$0.45,1
Central America.	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.45,1
China	Amoy tael	.71	.70,2	.71,6	.70,5	.69,1	.70,5	.70,9	.72,9
	Canton tael	.70,8	.70	.71,4	.70,3	.68,9	.70,3	.70,7	.72,7
	Chefoo tael	.67,9	.67,2	.68,4	.67,4	.66,1	.67,4	.67,8	.69,7
	Chinkiang tael	.69,3	.68,6	.69,9	.68,9	.67,5	.68,8	.69,3	.71,2
	Fuchau tael	.65,6	.65	.66,2	.65,2	.64	.65,2	.65,6	.67,4
	Haikwan tael	.72,2	.71,4	.72,8	.71,8	.70,3	.71,7	.72,1	.74,2
	Hankau tael	.66,4	.65,7	.67	.66	.64,7	.65,9	.66,3	.68,2
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.68,2	.67,5	.68,8	.67,8	.66,5	.67,7	.68,2	.70,1
	Niuchwang tael.	.66,5	.65,9	.67,1	.66,1	.64,8	.66,1	.66,5	.68,4
	Shanghai tael	.64,8	.64,1	.65,4	.64,4	.63,1	.64,4	.64,8	.66,6
	Swatow tael	.65,5	.64,9	.66,1	.65,1	.63,9	.65,1	.65,5	.67,4
	Takao tael	.71,4	.70,7	.72	.71	.69,6	.70,9	.71,4	.73,4
	Tientsin tael	.68,8	.68	.69,4	.68,3	.67	.68,3	.68,7	.70,7
Colombia	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.45,1
Ecuador †	do	.43,9	.43,4	.44,3	.43,6				
India	Silver rupee‡	.20,8	.20,6	.21	.20,7	.20,3	.20,7	.20,8	
Mexico	Silver dollar	.47,7	.47,2	.48,1	.47,4	.46,4	.47,3	.47,6	.49
Persia	Silver kran	.08,1	.08	.08,2	.08	.07,9	.08	.08,1	.08,3
Peru †	Silver sol	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.48,7

Countries.	Monetary unit.	1901.				1902.		
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.
Bolivia	Silver boliviano.	$0.46,8	$0.45,1	$0.43,6	$0.42,8	$0.41,3	$0.40,3	$0.38,2
Central America	Silver peso	.46,5	.45,1	.43,6	.42,8	.41,3	.40,3	.38,2
China	Amoy tael	.75,7	.72,9	.70,5	.69,1	.66,9	.65,1	.61,8
	Canton tael	.75,5	.72,7	.70,3	.68,9	.66,7	.64,9	.61,7
	Chefoo tael	.72,4	.69,7	.67,4	.66,1	.63,9	.62,3	.59,1
	Chinkiang tael	.74	.71,2	.68,8	.67,5	.65,3	.63,6	.60,4
	Fuchau tael	.70,1	.67,5	.65,2	.64	.61,8	.60,2	.57,2
	Haikwan tael	.77,1	.74,2	.71,7	.70,4	.68	.66,3	.62,9
	Hankau tael	.70,9	.68,2	.65,9	.64,7	.62,6	.60,9	.57,9
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.72,8	.70,1	.67,8	.66,5	.64,3	.62,6	.59,5
	Niuchwang tael.	.71	.68,4	.66,1	.64,8	.62,7	.61,1	.58
	Shanghai tael	.69,2	.66,6	.64,4	.63,2	.61,1	.59,5	.56,5
	Swatow tael	.70	.67,4	.65,1	.63,9	.61,8	.60,2	.57,1
	Takao tael	.76,2	.73,4	.70,9	.69,6	.67,3	.65,5	.62,2
	Tientsin tael	.73,4	.70,7	.68,3	.67	.64,8	.63,1	.59,9
Colombia	Silver peso	.46,8	.45,1	.43,6	.42,8	.41,3	.40,3	.38,2
Mexico	Silver dollar	.50,9	.49	.49	.46,4	.44,9	.43,7	.41,5
Persia	Silver kran	.08,6	.08,3	.08,3	.07,9	.07,6	.07,4	.07

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* The "British dollar" has the same legal value as the Mexican dollar in Hongkong, the Straits Settlements, and Labuan.

† See footnote, table of fixed currencies.

‡ The sovereign is the standard coin of India, but the rupee is the money of account. See also table of fixed currencies.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Berkovets	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do*	Japan	1.31 pounds.
Do	Java, Siam, and Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chetvert	Russia	5.7748 bushels.
Chih	China	14 inches.

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*More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Funt	Russia	0.9028 pound.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	6 feet.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Koku	Japan	4.9629 bushels.
Korree	Russia	3.5 bushels.
Kwan	Japan	8.28 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11⅜ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Spain	1.0144 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet: unhewn, 40 cubic feet: inch planks, 600 superficial feet.
Manzana	Costa Rica.	1½ acres.
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	82$\frac{2}{7}$ pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles.
Do	Denmark (geographical)	4.61 miles.
Milla	Nicaragua and Honduras	1.1493 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.82838 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands.	137.9 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Spain	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile,* Chile, Mexico, and Peru	101.41 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¼ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acres.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9305 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.

*Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the Peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4.5 bushels.
Tunnland	Sweden	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Spain	0.914117 yard.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.417 gallons.
Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.

Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

Vol. LXX. SEPTEMBER, 1902. No. 264.

THE CAPE TO CAIRO RAILWAY.

When the Duke and Duchess of Cornwall and York visited South Africa, they found a "train de luxe" in use on the Cape government line. According to the last annual report of the directors of the British South Africa Company, the train de luxe will soon be running between Cape Town and Bulawayo (1,500 miles).

In Rhodesia, railroad building is progressing rapidly, although the Boer war interfered with the transportation of construction and equipment material from the south. Meanwhile, the Beira-Salisbury line has been extended southward and a junction formed with the main line at Bulawayo. It was originally intended that the line from Bulawayo via Gwelo to Salisbury should constitute the first section of the main line northward, toward Lake Tanganyika, and that the Zambesi should be crossed in the vicinity of Kariba Gorge. Later explorations, and particularly the discovery of the Wankie coal beds, have led to the adoption of a route farther to the west, including the crossing of the Zambesi at Victoria Falls. The railway is due to reach the coal fields during the coming autumn and Victoria Falls before the end of 1903.

On April 14, 1902, an agreement was signed in Brussels which would seem to constitute an important step toward the realization of the late Cecil Rhodes' "dream." Under the Belgian contract, the German route is abandoned, and the Cape to Cairo Railway will be carried through the Kongo Free State to the upper waters of the Nile. Instead of heading for Lake Tanganyika and German East Africa, the line will continue due north of Victoria Falls to the Kongo border, and thence via Katanga to Lake Kasali, which is the most southerly navigable point on the Lualaba (one of the principal reaches of the Kongo). Approximately, the distances to be covered are: Bulawayo to Victoria Falls, 300 miles; Victoria Falls to Lake Kasali, 700 miles. From Stanley Falls on the Upper Kongo a railroad will be built to Mahagi on Lake Albert Nyanza (480 miles), thus supplying the missing link between the Cape and the Egyptian railway nets. Such is the scope of the concession which Mr. Robert Williams obtained last month from the King of the Belgians. This project does not, however, necessarily replace the original central line through German territory, as planned by Mr. Rhodes and the German Government. In fact, it is quite likely, if the proposed railroad be built from the coast of Dar-es-Salaam, the capital of German East Africa (either through subsidy granted by the Reichstag or by private capital under State guaranty), that the original Cape to Cairo scheme via Tabora will be realized. Both lines may astonish the world before many years as full-fledged realities. All maps of Africa more than six months old are obsolete, because history is being made so rapidly in those regions.

By joining at Lake Kasali the Kongo Free State river and railroad system, the Cape to Cairo Railway would secure a western feeder, via Leopoldville and Matadi, of the highest importance. On the eastern side, there are already two feeders in waiting, viz, the Beira-Mashonaland Railway (350 miles) and the Mombasa-Uganda Railway (660 miles). For the latter, rails had been laid last Christmas as far as Lake Victoria Nyanza. Another prospective eastern feeder is the proposed Suakin-Khartoum line, the construction of which via Berber (350 miles) during the next two years seems to have been recently decided upon by the Sudan government. This will make Suakin on the Red Sea, instead of Alexandria, the chief port of the Sudan. To these eventual feeders may also be added the French line from Djibouti through Abyssinia via Harrar to the capital of King Menelik's dominions (430 miles), and perhaps to Fashoda, an enterprise which, by act of the Chambers, was recently granted financial support from the Government of France.

In the development of the Dark Continent, as Africa is yet called, the United States is not at present playing a conspicuous part. Stanley's momentous work in the seventies has not been followed up by his quondam countrymen; nor is our trade with Africa, except with Cape Colony, of relative consequence. It is to be hoped that more attention will be paid by our manufacturers and exporters to the African markets, and concerted efforts made to reach them. Cape Colony, with its imports of $84,000,000, and Egypt, with its imports of $70,000,000, bought, in 1900, $8,600,000 and $1,400,000 worth, respectively, from the United States. Even at that rate, there is ample room for improvement; but our showing is much less satisfactory when we consider the markets of Abyssinia, the Sudan, the Kongo Free State, Rhodesia, and other growing nations and protectorates in the interior. Rhodesia alone imported during the year ended March 31, 1901, goods to the amount of $10,267,518. These figures indicate only faintly what may be expected in five or ten years. Rhodesia is eight and one-half times the size of Great Britain, and its natural resources include rich deposits of gold and of coal, besides fertile lands and forests. The closing of hostilities in South Africa will give a tremendous impetus to agricultural, industrial, and commercial activity throughout the Continent.

G. Bie Ravndal,
Beirut, *May 10, 1902.* *Consul.*

TRIPOLI AND THE UNITED STATES.

One of the few portions of the known world with which the United States has no commercial relations, into which its products do not filter even through indirect channels, and with which our Government does not even maintain communication through the instrumentality of a consular agency is Tripoli, that vast nominal dependency of Turkey bounded by Tunis and the Sahara and Lybian deserts. A few hides and tanned skins reach the United States from Tripoli, but as no representative of the United States stands guard with helpful suggestions, our people have no share in the slowly developing relations of that country with the modern world. Were the situation otherwise, and were our exporters prepared to do business according to the local rule, quoting c. i. f. prices and accepting ninety-day drafts with an optional cash discount, as do others, there is no reason why the word America should not become as familiar in Tripoli as it is elsewhere.

Correspondence for Tripoli is transmitted via Marseilles, which enjoys a weekly steamship service with the capital city. The commerce between the two countries reaches 3,500,000 francs ($675,000), of which 2,000,000 francs ($386,000) represents imports from Tripoli. The exports from this country include cheap silks, cottons, thread, flour, coffee, medicines, sugar, leather, and silver plates; the imports consist of skins, ostrich feathers, wool, and sponges.

For some months, the country has been in a state of excitement, owing to an effort to enforce a conscription law among the Arabs and the levying of a new land and property tax. The enforcement of the conscription regulations should have been commenced on March 14, the beginning of the Turkish fiscal year; but the attitude of the Arabs has been so hostile with respect to this measure that the whole matter has been left in abeyance. The assessors are continuing the appraisement of the land, however, and it remains to be seen whether or not the tax will be imposed later on.

It has been decided to erect a telegraph line between Tripoli and Fezzan, and for this purpose the Government has received the necessary wire and insulators. While intended for military purposes, it is also hoped that it will be a means of increasing trade with the interior. Among minor improvements, the custom-house, long since inadequate for the storage of goods, is being enlarged.

Trade generally has been in a depressed state, partly because of the feared enforcement of the land and property tax and partly because of deficient rains and consequent poor outlook for growing crops.

The principal article of export from Tripoli is esparto grass, all of which is now shipped to Great Britain. The value of this export amounted in 1901 to $377,500. It may be mentioned incidentally that as the Turkish Government keeps no statistics, these and other figures are obtained from private sources. In the same year, sponges to the value of $187,500 were brought into Tripoli by fishing boats, but only one parcel was sold locally, and that to an American buyer, the remainder being taken to the Ionian Islands, the owners holding out for higher prices than were offered. This year the Turkish Government has refused to issue permits to other than Ottoman subjects to fish for sponges in Turkish waters, thereby causing great dissatisfaction and loss to the Greek sponge fishermen, who have had this business completely in their own hands.

All the ostrich feathers of Tripoli are shipped to Paris. The exports of 1901 were valued at $140,000.

During the year 1901, Sudan-tanned skins to the value of $152,500 were exported to the United States, and the exports for five months of 1902 have amounted to $91,265. Raw goatskins to the value of $69,500 were shipped to Marseilles during 1901. In former years, a considerable direct business in this line was done with the United States, and there is reason to suppose that most of the hides forwarded to Marseilles eventually find their way to the United States.

Petroleum from Russia to the value of $120,000 was imported last year. American petroleum has not obtained a foothold.

Flour to the value of $275,000 was imported in 1901, as compared with $640,000 in the previous year; it all came from France and Italy.

I believe that American firms in many lines could build up a very satisfactory importing and exporting trade with Tripoli if proper efforts were put forth.

ROBERT P. SKINNER,
Consul-General.

MARSEILLES, *June 23, 1902.*

NEED OF DIRECT STEAMSHIP LINE TO THE WEST COAST OF AFRICA.

In spite of the keen competition for foreign trade, I feel sure that few Americans give a thought to the west coast of Africa, and yet recent trade statistics show that this field is promising, as it is comparatively new; competition is less severe than in many other parts of the world, and the commerce is increasing by leaps and bounds.

Formerly, when sailing vessels were universally employed in the world's carrying trade, Americans enjoyed their full share of the business of the west coast of Africa and of the Canary Islands; but since the general introduction of steam, we have fallen off lamentably. As a result of inquiries, I find that the American houses formerly engaged in this trade have ceased to compete, with the exception of one firm, which has a store in Sierra Leone and has recently opened a branch in Monrovia, Liberia.

Business can be developed in this part of the world by the establishment of a regular line of steamers between the United States and the west coast of Africa, via the Canary Islands, and I have no doubt that money invested in this way would give good returns. If a bimonthly or monthly line were inaugurated, I feel confident that the vessels would receive full cargoes outward and a considerable freight homeward; they would, further, receive compensation for the carriage of mails. The passenger traffic would also be not inconsiderable. The ports of the Canary Islands are free, and the actual disbursement of a steamer under ordinary circumstances need not exceed $15. Coal is obtainable at very low prices; provisions are good, cheap, and plentiful. At most of the West African ports, steamers carrying mails are exempt from port dues.

The principal articles of export from the Canary Islands and the west coast of Africa are benne seed, cochineal, coffee, dyewoods, ginger, gum of all sorts, ivory, kola nuts, palm kernels, palm oil, raw hides, rubber, wax, etc. The imports comprise canned goods, cottons, lard, lumber, petroleum, pork and hams, tobacco (manufactured and raw), hardware, and manufactured articles of all kinds.

CANARY ISLANDS.

The importations of the Canary Islands from the United States, according to our returns of exports, have been:

1896	$266,192
1897	297,878
1898	274,827
1899	216,625
1900	238,706

These figures should be increased from 150 to 200 per cent, to include articles originating in the United States but reported as coming from England and Germany, on account of their being imported from ports in these countries.

The principal articles sent from the United States are lard, lumber, cottons, petroleum, and tobacco, raw and manufactured. Not only would these articles be increased in quantity by direct communication, but many others would be added. A member of one of the principal firms in these islands has stated to me that he would guarantee a minimum freight of 200 tons cargo per month from the United States, were a monthly line inaugurated. This would be a beginning, and I have no doubt that the monthly quantity for these islands would be at least 500 tons.

The value of exports to the United States for five years has been:

1896	$44,979
1897	49,909
1898	26,283
1899	24,193
1900	21,607

None of the principal products, such as bananas, oranges, tomatoes, and vegetables (which grow all the year round), are sent to the United States, though with direct steamers there is no doubt that a good export business might be worked up.

I may refer to the fact that for many diseases, especially those of lung and throat, the climate of these islands is unequaled, and they are steadily growing in popularity as a health resort; nowhere can the open-air treatment, so much in vogue for tuberculosis, be better practiced.

There are a number of good hotels and a fast service of steamers between the different islands, which are visited by 3,000 to 4,000 strangers—mostly English—every winter. Many Americans would doubtless avail themselves of the opportunity to come to these islands for business, health, and pleasure, and would bring extra revenue to a steamship company.

SIERRA LEONE.

As to West African trade, I give below statistics of exports and imports of Sierra Leone, which are taken from a publication devoted to this trade and are considered reliable.

Exports for 1901.

Description.	Value.			
	£	*s.*	*d.*	
African produce	256,283	17	3	$1,247,205
European manufactures	47,725	12	10	232,257
Total	304,009	10	1	1,479,462

Principal articles of export.

Article.	Quantity.	Value.
Palm kernels ... tons	20,478	$787,149
Kola nuts ... do	13,391	252,110
Palm oil ... gallons	125,502	47,664
Rubber ... cwts	1,175	44,787
Ginger ... do	12,433	42,542
Gum copal ... do	1,344	28,240
Benne seed ... do	4,696	12,701

Imports in 1901.

Description.	Value.	
Government stores:		
Imperial	£27,958	$136,058
Colonial	56,566	275,278
Specie	1,877	9,134
Other	415,068	2,019,928

FRENCH WEST AFRICA.

The French colonies on the west coast of Africa are increasing in importance every year, and are receiving zealous attention from the French Government. The United States exported to these colonies, in 1900, $657,266 worth, and received therefrom products to the value of $601,165.

The following shows the exports of the United Kingdom to the French West African possessions in 1900:

Article.	Quantity.	Value.	
Apparel and haberdashery		£8,214	$39,973
Arms, ammunition, and military stores		5,017	24,415
Coal, cinders, and fuel ... tons	4,202	44,360	215,878
Cotton yarn ... pounds	75,400	3,004	14,619
Cottons:			
Entered by the yard ... yards	40,763,400	491,823	2,393,457
Entered at value		31,528	153,431
Earthen and china ware		5,766	28,060
Hardware (unenumerated cutlery)		6,607	32,153
Metal (iron, wrought and unwrought) ... tons	1,335	22,573	109,852
Oil, seed ... do	578	13,909	67,688
Provisions, including meat		5,088	24,761
Salt ... tons	4,777	6,272	30,523
Soap ... cwts	7,846	4,875	23,724
Spirits, British and Irish (proof gallons) ... gallons	47,331	4,922	23,953
Telegraph wires and apparatus		16	78
Manufactures of wood		5,594	27,223
Parcel post		325	1,582
All other articles		49,407	240,439
Total		709,900	3,651,815

The nature and value of imports from the French West African possessions into Great Britain for 1900 were:

Article.	Quantity.	Value.	
Rubber ... cwts...	39,609	£383,462	$1,866,118
Dyewoods (other than logwood) ... tons...	170	889	4,326
Gum of all sorts ... cwts...	3,959	14,338	69,776
Raw hides...		6,169	30,021
Ivory...		7,948	38,679
Nuts and kernels ... tons...	1,886	20,606	100,279
Palm oil ... cwts...	11,801	13,976	68,014
Skins (furs of all sorts)...		219	1,066
Wax...		907	4,414
Wood:			
Furniture woods and hard woods; mahogany ... tons...	8,379	77,460	376,957
Unenumerated woods...		5,757	28,016
All other articles...		2,996	14,580
Total...		534,727	2,602,246

I have no further statistics available, but the business done between these countries and France, Germany, and Belgium is also of great importance. All the above-mentioned European countries, as well as Portugal, have steamship lines trading to and from the Canary Islands and the west coast of Africa.

Direct steamship communication will steadily increase American trade, as our goods now have an established reputation all over the world. I trust the near future may see a regular line of steamers plying between the United States and the west coast of Africa via the Canary Islands.

SOLOMON BERLINER,
Consul.

TENERIFFE, *May 30, 1902.*

TRADE CONDITIONS IN SOUTH AFRICA.

Now that peace has been declared in South Africa, there will come an enormous demand for goods. Many farm houses in the Transvaal and the Orange River Colony have had their thatched roofs burned and will have to be reroofed, probably with galvanized iron, a material much used for this purpose here. It will also be necessary for many of the farmers to purchase new agricultural implements, vehicles, furniture, harness, and food for man and beast. Every store will have to be restocked. In short, all enterprises will be started anew, and it will not be possible to get goods into the interior fast enough to meet the demand that will arise.

All nations are awaiting this trade and are preparing for it by establishing direct lines of ocean transportation—all nations except the United States, which, other than an occasional freight steamer, has no direct communication with Cape Colony.

A statement has recently appeared in local newspapers to the effect that a direct line of steamers will be established between Canada and Cape Colony. The Auckland (New Zealand) Weekly News, of March 28 last, also contains an item in which it is stated that the New Zealand government has accepted the tender of the Blue Star Company for a direct steamer service with South Africa. According to recent London advices, this line will be put into operation in the near future, with a monthly service between four New Zealand ports and three ports of this colony. The New Zealand government is to grant the new line an annual subsidy of $145,995. The consul-general of the Argentine Republic at Cape Town, it is reported, has completed arrangements for a line of steamers from the River Plata to South Africa, with a view to supplying this colony with Argentine meats and other produce. The first vessel, the *Pampa*, was scheduled to leave Buenos Ayres April 30 with 1,000 head of cattle and 3,000 tons of other cargo; thereafter, monthly trips will be made. The steamers are owned and operated by the Argentine Government, and will undoubtedly prove at first an unremunerative venture, but the cattle and grain exporters will enjoy the benefits of a good market.

The United States ships to this part of the world more than twice as much goods as any other country, except Great Britain. We have been sending to South Africa an immense amount of the material required to carry on the war, and this has accounted for much of our increased trade—a trade that will cease when the war ends. It is said that from the beginning of hostilities up to April 3, 1902, the United States has furnished 201,607 horses and mules for service in the British army; also a vast amount of grain, hay, meat, and other articles. Horses will still be purchased to some extent and feed will always be in demand, though in less quantities than at present; indeed, until a different method of farming is adopted here, this country will never be able to raise nearly enough to supply its wants. But when there is no longer a demand for army supplies from the United States, our imports into South Africa will probably decrease to their normal volume, or nearly so; and if we intend to strengthen our hold on the manufactured-goods trade, we must conduct that trade directly, instead of through the hands of our competitors. As British subjects will have a great war debt to pay, they very naturally think that the trade of South Africa belongs to them and will leave nothing undone to retain it. We can not always depend solely on the superior quality of our goods; greater effort on our part is necessary. Our grain, our flour, our meat must compete with that produced by the Argentine Republic, New Zealand, or Australia. New Zealand timber is certainly as good as ours, and the premier of that colony, Hon. Richard Seddon, in a speech in this city yesterday, said that his people proposed to handle this trade in the future.

W. R. BIGHAM,
Consul-General.

CAPE TOWN, *May 28, 1902.*

IRON WORKS IN NEW SOUTH WALES.*

Consul-General J. P. Bray reports from Melbourne, May 12, 1902, that the following appeared on the 10th instant in the Age, one of the leading newspapers of Australia:

> A powerful company, having a capital of £730,000 ($3,552,500), has been formed in London to acquire the extensive iron works of Messrs. John Sandford & Co., at Lithgow, New South Wales. The new company has given orders for two blast furnaces, steel furnaces, and rail and plate mills.

The formation of this company, says Mr. Bray, is attributed to the protection afforded by the Commonwealth tariff, and it is anticipated that the immense iron deposits known to exist in the States of New South Wales, Victoria, and Tasmania will be developed and the iron and steel industry established on a large scale.

* * *

Writing on the same subject, Consul O. H. Baker, of Sydney, under date of May 20, 1902, sends the following extracts from a local newspaper:

> This will be the only blast furnace at work in Australia. The plant is to be up to date in every respect. Many parts of the furnace can be made locally, but certain sections have to be imported.
>
> Mr. Dando, Sydney representative of the company, calculates that the works will consume, say, 6,000 tons of coal per week, or 1,000 tons per day.
>
> As far as the probable requirements of Australia are concerned, recent figures go to show that in one year there were imported:

	Tons.
Steel rails	91,197
Rolled iron and steel	54,814
Steel sheets	56,862
Wire	44,602
Total	247,475

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*See ADVANCE SHEETS No. 1366 (June 13, 1902).

To make this quantity 307,000 tons of pig iron would be required, and to produce that quantity of pig iron 614,000 tons of first-class iron ore would be necessary, and to smelt that quantity of iron ore about 900,000 tons of coal would have to be used.

The present duty on pig iron, adds Mr. Baker, is 10 per cent ad valorem; on rails and fixtures, steel beams, joists, etc., 15 per cent ad valorem. Galvanized plates are admitted free.

MEATS AND DAIRY PRODUCTS IN NEW ZEALAND.

I give below a statement of the quantities and value of meats, butter, and cheese exported from New Zealand from March 31, 1901, to March 31, 1902:

Description.	Quantity.	Value.	
Meats:	*Cwts.*		
Frozen	1,871,731	£2,232,385	$10,863,902
Preserved	37,903	125,355	670,040
Butter	219,493	983,224	4,784,860
Cheese	86,476	189,992	924,596

These exports went almost wholly to Great Britain. The increase in the export of butter is very marked, being 20 per cent in quantity and 24 per cent in value.

The dairy industry in New Zealand is advancing rapidly, and the government is doing all it can to promote the trade. Experienced government graders are constantly employed at the principal ports, examining the exports of these products and issuing certificates of quality. It is a rare thing in any part of New Zealand to be served with poor butter. The same is true of beef and mutton.

There are no droughts in New Zealand, and it is a fine grazing country. Cattle are never housed here, as the climate is mild enough for them to be left in the open all the year round.

The difficulty in exporting to the United States is the absence of direct communication by steam. To the west coast, the Oceanic Steamship Company maintains a direct line, with fine modern steamers running every three weeks to San Francisco, but to the east coast there is absolutely no direct communication, which is so necessary for food products that must be carried in a frozen condition with as little handling as possible.

There are steamers running regularly to New Zealand and Australia from New York, and many of them are built to carry meat and dairy products; but they are all English steamers, and on the return voyage go to England, where everything destined for America has to be transshipped, which adds very much to the cost of delivery.

As shown by the figures given, the average cost per pound of the products mentioned is: Frozen meat (including lamb, mutton, and beef), 2½d. (5 cents); butter, 9½d. (19 cents); cheese, 4¾d. (9½ cents). These figures represent the f. o. b. New Zealand cost.

The quantities of the different kinds of frozen meat exported are:

Mutton:		
Whole carcasses	number	1,585,238
Joints	do	63,617
Lamb	carcasses	1,351,145
Beef	cwts. (of 112 pounds)	312,291
Rabbits, frozen in the skin	number	6,501,997
Hares, frozen in the skin	do	12,260

I am induced to send this report, as I notice that a trial shipment of New Zealand mutton has recently been made to New York, which was spoken of very highly by the experts who examined it.

L. A. BACHELDER,
Vice-Consul.

AUCKLAND, *May 26, 1902.*

SIBERIAN BUTTER IN EASTERN MARKETS.

Siberia is bidding strongly for the butter trade of the East. Not only are the markets of Dalny and Port Arthur supplied by the Siberian product, but it is also shipped in considerable quantities to the principal commercial centers of China and Japan. The possibilities for the production of both milk and butter in Siberia are unlimited.

Two grades of Siberian butter are sold in Niuchwang. The first grade—table butter—is put up either in 2-pound rolls or in 2-pound casks or tins. It contains very little salt, and can not withstand a warm climate; consequently, it is successfully shipped only during the winter months. The price of table butter at Tomsk is 12 rubles per pood, or about 16⅔ cents per pound.

The second grade is used only for cooking purposes, and is put up in 5-gallon oil cans, casks, or rolls. It retails at Tomsk at 7 rubles per pood (about 10 cents per pound). The cost of shipping freight from Tomsk to Manchuria is 3.50 rubles per pood ($1.80 per 36.112 pounds), but it is hoped that this rate will soon be considerably reduced.

HENRY B. MILLER,
Consul.

NIUCHWANG, *May 29, 1902.*

NOTES FOR TRAVELERS OVER THE SIBERIAN RAILROAD.

I give below some notes of interest to travelers going over the Siberian Railroad. I am receiving many requests for information of this character.

Trains can be taken at Vladivostock, Dalny, Port Arthur, or Niuchwang daily for St. Petersburg, all-rail route except 27 miles across Lake Baikal.

At present, only second-class accommodations can be had from the Pacific to Irkutsk. First-class trains are expected to cover the entire route in a short time. Station eating houses are plentiful along the route, but a good lunch basket will be found advantageous.

From Irkutsk, three fast trains per week are run to St. Petersburg. These are fitted up with dining cars, bath, barber shop, and library. Slower trains run daily. The time from Irkutsk to St. Petersburg on fast trains is eight days.

It is advisable to engage compartments or seats on the train a day in advance of leaving.

Blankets, pillows, towels, and soap should be carried by travelers.

BAGGAGE.

Baggage to the amount of 36 pounds is carried free, and all above that going into the luggage car is charged for. It is therefore advisable to have as much hand baggage as possible.

COST OF FARE.

A first-class fare from Irkutsk to St. Petersburg will not exceed 121.50 rubles ($62.57); second class, 90.90 rubles ($46.81). Sleeping car from Irkutsk to St. Petersburg costs, first class, 22.52 rubles ($11.60); second class, 14.32 rubles ($7.37); from the Pacific to London, first class, 250 rubles ($128.75); second class, 200 rubles ($103).

TIME.

From Japan or China to New York via Siberia, the time required and cost of trip are about the same as across the Pacific and the American continent.

Travelers from London have been arriving at Niuchwang in twenty days.

LANGUAGE.

Persons not able to speak the Russian language should have a small dictionary in their native tongue and Russian, or at least a book containing the words used for food, drink, and common requirements. Only Russian is spoken by trainmen.

MONEY.

In the matter of money, after leaving the Pacific all should be in rubles and kopecks. One ruble is about equal in value to 50 cents gold and 1 kopeck to 0.5 cent gold. Money can be exchanged at the banks at Vladivostock, Dalny, Port Arthur, or Niuchwang.

PASSPORTS.

Passports, visaed by a Russian consul, are required.

CONNECTIONS FROM CHINA AND JAPAN.

Trains from Pekin and Tientsin make close daily connection with trains for St. Petersburg at Niuchwang, requiring two days' time from Pekin to Niuchwang.

Several steam lines run from Japan, Shanghai, and Chefoo to Vladivostock, Port Arthur, Dalny, Niuchwang, and Tientsin.

HOTELS.

The best hotels are at Dalny and Niuchwang, and these are only fair. Port Arthur has as yet no hotel accommodations, and it is advisable to remain on the steamer until leaving by train.

UNITED STATES OFFICIALS.

There is a consul of the United States at Niuchwang, and a United States commercial agent at Vladivostock. The United States has no representative at Dalny or Port Arthur, or at any other point in Manchuria or Siberia.

CABLES AND TELEGRAMS.

Telegrams can be sent to London and points in Europe for 59 kopecks (30.3 cents) per word, and to New York for 98 kopecks (50.4 cents) per word. Telegraph rates to all points in Russia are 15 kopecks (7.7 cents) per message* and 10 kopecks (5.1 cents) per word additional.

HENRY B. MILLER,
NIUCHWANG, *May 27, 1902.* *Consul.*

TRADE OF PORT ARTHUR.

As there is no custom-house at Port Arthur, no definite figures can be given in regard to the imports, but a rough estimate shows that not less than 180,000 tons of cargo were imported into Port Arthur in 1901.

The principal imports were cotton piece goods, silk piece goods, metals, flour, household effects, paper, sugar, and tobacco. Among other articles may be noted building materials, timber, kerosene, ammunition, and machinery.

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*Number of words not stated.

The principal firms are:

- American Trading Company.
- Bismark & Co.
- Churin & Co.
- Clarkson & Co.
- East Asiatic Company.
- Gunzbourg & Co.
- Kondakoff.
- Kunst & Albers.
- Langeluetje.
- Sietas Block & Co.
- Tifontai.
- Mitsui Bushian Kaisha.
- Heimann & Aurnhammer.
- Mess & Co.
- Ptashnikoff.
- Kornabe, Eckford & Co.
- Russo-Chinese Bank.

The number of all the trading houses and firms is approximated at 700 and their volume of trade at about 35,000,000 rubles ($18,025,000) yearly.

The following shows the shipping:

Steamers entered.	Number.	Steamers entered.	Number.
Chinese Eastern Railway seagoing steamship service	268	Norwegian	37
Russian volunteer fleet	28	German	16
Japanese	121	Danish	6
Russian Merchant Tifontai	75	American	7
East Asiatic Company	15	Total	761
British	191		

HENRY B. MILLER,
Consul.

NIUCHWANG, *May 3, 1902.*

TRADE OF KOREA IN 1901.

Korea experienced a severe drought in 1901, which caused a very general failure of crops and much consequent distress. The trade for the first half of the year, however, was so good that the total was larger than ever before. The value of trade is given in the customs reports as follows:

Description.	Value.	
	Yen.	
Imports from foreign countries	14,777,234	$7,359,063
Imports from Korean treaty ports	5,217,256	2,598,193
Exports to foreign countries	8,461,949	4,214,051
Exports to treaty ports	2,994,862	1,491,641
Total	31,451,301	15,662,948

To this should be added:

Description.	Value.	
	Yen.	
Import of nickel blanks for coinage	602,622	$300,106
Export of gold	4,993,351	2,486,689

As there is no direct communication between Korea and the United States, imports from the latter country do not appear separately, but are included with those from China and Japan. A considerable portion of the cotton goods imported into Korea from Japan is manufactured from American cotton. The same is true of the tobacco brought from Japan. Doubtless, many other of the articles imported from China and Japan are of American origin. By inquiry among American importers in Korea, it is found that the following importations of American goods have been made:

Description.	Value.	
	Yen.	
Kerosene and sundries	626,508	$312,001
Mills, machinery, and supplies	500,000	249,000
Electrical plant and lumber	475,143	236,621
Total	1,601,826	797,622

The exportation of gold is increasing satisfactorily. Since Americans began mining operations in Korea in 1896, the export has been:

Year.	Value.	
	Yen.	
1896	1,390,412	$692,425
1897	2,034,079	1,012,971
1898	2,357,725	1,174,147
1899	2,933,382	1,460,824
1900	3,633,050	1,809,259
1901	4,993,351	2,486,689

H. N. ALLEN,
Minister.

SEOUL, *May 24, 1902.*

BICYCLES AND AUTOMOBILES IN JAPAN.

The importation of bicycles into Japan has more than doubled in the past two years, the value of the imports in 1901 being $269,027, over 95 per cent of which came from the United States. The bicycle has not yet penetrated into the interior of the islands; it is used chiefly as a cheap method of locomotion in the seaports and large cities. Being employed principally for business rather than for pleasure, it is not subject to the caprice which caused such an extraordinary increase and decline in its use in America. The demand for bicycles in Japan is likely to grow for some time yet, after which it may be expected to continue fairly steady. For the first five months of this year, the imports of wheels show an increase of 16 per cent over the corresponding period of last year. A cheap wheel, costing from $12 to $25, finds most favor. Some bicycles for the troops have been manufactured at the Government works, and, as the customs tariff on bicycles and automobiles is not conventional, the Government may, if it seems desirable, assist home industry by another schedule unfavorable to foreign makers; but there is no present indication that this will be done. A few motor bicycles or tricyles are seen on the streets, but they are not at all common.

According to the most reliable information I am able to obtain, thirteen automobiles have, to this date, been shipped to Japan, but most of these still remain in the hands of the importers, who use them chiefly for advertising purposes. Automobiles are not named in the tariff schedules, but those brought here have been classed as carriages, which pay a duty of 25 per cent. There are no regulations for their operation and use, except as they come under the head of "steam plants," which can be operated only by a licensed engineer. This law has not yet been enforced against automobiles, but it is expected that it will be, should their use become more general, and especially if there should be any flagrant abuse of their privileges by the operators.

The Japanese are not a wealthy people, nor are they, even when possessed of wealth, much given to costly, extravagant, or ostentatious forms of pleasure, and it is improbable that the automobile will ever become the toy of fashion or the mere pleasure vehicle that it is in Europe and America. Besides this, the country roads are too poor and the city streets too narrow and too crowded with children—who, in most cases, have no other playground—for automobiling to be indulged in freely and with pleasure.

On the other hand, there is a fair prospect that automobiles may gradually come into use for purposes of business. I have been told that the postal authorities are now considering the advisability of purchasing automobiles for the transportation of the imperial mails at Tokyo. The mails are now carried in wagons or carts, each drawn by a single horse. The Government must keep several relays of these horses, which are a continual source of annoyance and expense. Should the postal authorities decide to buy automobiles, those that are run by steam would be considered objectionable because of the real or fancied danger of fire to the imperial mails. At present, gasoline is exceedingly expensive here, but plans are in progress for its manufacture in this country. If these plans prove successful, gasoline will undoubtedly become as cheap as in America, and its use for generating motive power will increase rapidly.

There are only a few street railways in Japan, some of which are electric lines; the others employ horse cars. An enterprising promoter might find it possible to establish a public automobile service, which, until additional street-car lines are built, would meet with no competition, except from jinrikishas.

The firms already interested in the importation of bicycles and the introduction of automobiles are Bruhl frères, 22 Water street, Yokohama; H. MacArthur, 10 Bund, Yokohama; E. H. Tuska, 194 Settlement, Yokohama; Eyton & Pratt, 77-B Yamashita-cho, Yokohama; Andrews & George, 242 Yokohama; and American Trading Company, 28 Yokohama.

E. C. BELLOWS,
Consul-General.

YOKOHAMA, *June 24, 1902.*

WHEAT AND FLOUR IN MANCHURIA.

Two modern flouring mills with American machinery have recently been constructed at Harbin, one with a capacity of 250 barrels and the other of 500 barrels a day. They are operated by Russian millers, and the product is said to be very satisfactory. The buildings are covered with American iron roofing.

The flour from these mills is going into the markets of Manchuria in competition with flour from the United States.

SOIL.

The soil of the larger part of Manchuria and Mongolia is of a sedimentary formation, many feet in depth, and very productive. While I have not been able to secure an analysis, I am satisfied that it contains the same elements for wheat production as the Columbia River basin in the United States. I inclose a sample of the best wheat that I have yet found in Manchuria.*

CLIMATE.

The winters are very cold, freezing the ground to a depth of several feet; but this thaws out in April, and by the middle of the month the fields are cultivated as easily as beds of ashes. Spring rains are sufficient to start the grain well, and during July the rains are very heavy, always providing sufficient moisture for the maturing of crops. Famines are therefore not features of this section. During the maturing and harvesting period, the season is dry. The winters are also very dry.

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* Filed in the Bureau of Foreign Commerce, where it may be examined by parties interested.

The country is cultivated in large tracts, mules and ponies being used. I have seen as many as six mules pulling a single plow. The plows are cheap and crude, and plowing is always shallow. Harvesting and thrashing are done by the hand methods common in other parts of China. The roads in winter are very good, and the Chinese can haul grain great distances at very low cost.

COST OF WHEAT.

The mills are able to secure wheat at 35 kopecks (18 cents) per pood (36.112 pounds)—about half a cent gold per pound—and the supply at this price is unlimited. Three grades of flour are produced here, and it is sold at the following rates: First grade, 2.60 rubles ($1.34) per 50-pound sack; second, 2.35 rubles ($1.21); third, 1.75 rubles (90 cents). The bran is sold for 15 kopecks (7.7 cents) for 36 pounds.

TRANSPORTATION.

Harbin is situated on the River Sungari, at the point where the Chinese Eastern Railway joins the Central Manchurian and where the latter crosses the river. The Central Manchurian runs to Vladivostock, about 350 miles away. The Chinese Eastern Railway reaches the sea at Niuchwang at a distance of about 450 miles, and Dalny and Port Arthur at 600 miles. The River Sungari is navigable for half of the year for steamboats that ply from Harbin to Harbarovsk, where they meet ocean-going vessels.

MARKET FOR AGRICULTURAL MACHINERY.

If flouring mills continue to increase in number, there is a probability of a market for American plows and harvesting and thrashing machinery throughout this section. As mules are used in cultivation and hauling, and as the land is cultivated in large tracts and the country is not thickly populated, no great change would be required to bring about the use of machinery. The greatest difficulty will be to provide tools of a sufficiently cheap type. A fairly good plow that could be sold at a very low cost might find a market in Harbin now; but its primary characteristic must be cheapness.

HENRY B. MILLER,
Consul.

NIUCHWANG, *April 29, 1902.*

WHEAT CROP OF INDIA.

The final estimate of the wheat crop of India for the season of 1901–2 has just been given out by the statistical department of the government of India.

The yield is estimated at a little more than 6,000,000 tons of

2,240 pounds, being 750,000 tons less than the previous year and about 500,000 tons less than the average for the preceding ten years.

The estimated area is given at 23,300,000 acres, or 300,000 acres more than the previous year and 2,000,000 acres less than the average for the preceding ten years.

The "rabi," or what we call the "winter crop," is planted in India in October and November, gets its start from the moisture held in the soil from the monsoon, and is nourished either by irrigation or the winter rains. It is generally harvested in the month of February, and is superior in acreage, yield, and quality to the summer wheat crop, called "kharif," which is sown in the month of June or just before the monsoon rains.

The season under consideration was on the whole unfavorable for the growth of wheat, and in western and central India conditions were disastrous. The monsoon of 1901 terminated early, and the winter rains were an almost complete failure, except in the United Provinces, where there was some rain, and the crop, aided by liberal irrigation, was better than the average. In the Punjab and the northwest frontier province, whence so much of the wheat exported from India is drawn, a poor harvest has been gathered. In Bengal, also, the drought was injurious; in the Central Provinces the yield is better than in recent years, but the harvests are limited in comparison with the results before seasons of drought and scarcity set in. The failure is very great in Bombay, Berar, the Nizam's territory, and Rajputana, where the injury done by the drought was completed by the depredations of rats and insects.

The following tables give final estimates of the whole wheat crop in India for the season of 1901–2:

Province.	Area in 1901–2.	Area in 1900–1901.	Average of preceding ten years.
	Acres.	*Acres.*	*Acres.*
Punjab	7,227,100	7,717,800	7,238,667
Northwest frontier province	796,500	....	....
United Provinces of Agra and Oudh	6,479,720	6,790,440	6,143,829
Bengal	1,388,200	1,498,700	1,488,000
Central Provinces	2,590,209	2,055,736	3,040,542
Bombay	1,333,816	1,433,810	2,161,569
Sind	495,613	479,487	481,155
Berar	280,085	243,554	649,779
Nizam's territory	712,157	748,163	1,224,292
Rajputana	535,241	713,290	1,314,325
Central India	1,451,633	1,238,317	1,574,886
Mysore	3,714	2,556	5,955
Total	23,293,988	22,921,853	25,322,999

Province.	Estimated yield of current year.	Yield of previous year.	Average of preceding ten years.
	*Tons.**	*Tons.**	*Tons.**
Punjab	1,846,300	2,636,700	2,041,569
Northwest frontier province	159,279	....	....
United Provinces of Agre and Oudh	2,401,940	2,384,605	2,027,079
Bengal	391,000	472,600	495,700
Central Provinces	561,574	440,909	524,762
Bombay	168,971	298,479	533,129
Sind	102,132	123,160	141,167
Berar	6,180	5,093	53,801
Nizam's territory	13,184	15,068	62,554
Rajputana	103,835	170,682	317,098
Central India	254,331	218,224	326,564
Mysore	256	197	500
Total	6,008,982	6,765,717	6,523,923

* Tons of 2,240 pounds.

The following figures give the exportation of wheat from India for the past seven years:

	Tons.
1895–96	500, 146
1896–97	95, 928
1897–98	119, 630
1898–99	976, 025
1899–1900	485, 204
1900–1901	2, 501
1901–2	366, 091

It will be noted that in one year only does the trade approximate 1,000,000 tons. It is doubtful whether the exports of this year's wheat will exceed the restricted trade of last year.

WM. THOS. FEE,
Consul.

BOMBAY, *June 14, 1902.*

AGRICULTURAL BANKS IN TURKEY.

The Empire of Turkey possesses an extensive system of agricultural banks under Government management, the purpose of which is to furnish small loans to farmers. The capital is provided by a light annual tax on agricultural property. Principal agencies have been established in sixty-five cities, capitals of provinces (vilayets) or counties (sanjaks), and there are 803 branches in less important places.

Loans for the purpose of improving farms and purchasing implements and stock are made on satisfactory security, chiefly real estate. The rate of interest is 6 per cent per annum.

Theoretically, this system of banks is an excellent one, but its effectiveness is hampered by two causes—the formality necessary to borrow even small sums and the requisitions made for forced loans from the capital of the banks by other branches of the Government.

The last annual report of the banks—for the financial year ended March 13, 1899—has just appeared and contains the following summary of operations:

At that date (March 13, 1899), the capital amounted to $12,642,090, of which 84 per cent, or $10,619,355, was loaned to farmers.

During the year, the banks loaned to 90,536 individuals sums amounting to $2,621,400—an average of $29 for each loan.

This average is a forcible illustration of the humble scale upon which agricultural progress in Turkey is based. Over 96 per cent of the loans were made upon real-estate security; the remaining 4 per cent were on personal guaranties.

The branch bank located at Mezreh, the chief city of this province, makes all loans on property in the territory adjacent to Harput and Mezreh; other branches at Malatia, Arabkir, and Eghin supply the needs of the remoter portions of the vilayet.

The branch at Mezreh in the past year increased its capital by £1,700 Turkish ($7,480), received from taxation. Some 350 borrowers secured loans amounting to £4,000 Turkish ($17,600). The average loan at Mezreh is about $50 and the average duration of a loan five years.

THOMAS H. NORTON,
HARPUT, *June 20, 1902.* *Consul.*

COMMERCE OF MOSUL.

The recent report to the French Foreign Office, from the French vice-consulate at Mosul, on the commerce of that important center during the year 1900, contains a valuable résumé of its trade relations with foreign countries.

The city is the chief commercial center between Diarbekir and Bagdad, and has a population of about 57,000. The value of all imports for 1900 was $941,000; for 1899, $793,000; thus showing a healthful increase. Of the total importations in 1900, goods to the value of $526,000 (56 per cent) were of foreign origin.

England leads in imports, sending large quantities of cottons, muslins, and flannels. France also sends textiles, as well as dyestuffs, sugar, alcohol, spices, drugs, leather, and candles. The total value is much below that of the English importations. Austria exports soaps which are nonodorous. The residents of Mosul have a pronounced, and very unusual, dislike for perfumes and all articles appealing to the sense of smell.

Sewing machines come exclusively from the United States, which contributes but little in addition. Germany, Switzerland, Italy, Persia, and Greece send comparatively small quantities.

Transportation is by caravan and by rafts from Diarbekir and the upper waters of the Tigris.

The native merchants look with but little favor on the expansion of commercial relations with foreign countries, and great prudence is required in all dealings with local firms.

Thomas H. Norton,
Harput, *May 31, 1902.* *Consul.*

DEMAND AT HARPUT FOR HARDWARE, ETC.

During the past few months, there have been special demands at this consulate for catalogues, price lists, and general information concerning the several classes of manufactured articles enumerated below.

There are marked indications of excellent openings for American wares in these different lines, resulting from dissatisfaction with the quality of the articles imported from Europe and the high grade of similar objects brought from America by the members of the resident American colony. Several firms in Mezreh and in Harput are desirous of accepting agencies and pushing energetically the American wares.

Agent's terms, accompanied by detailed, illustrated price lists, are requested. They can be sent to this consulate—post-office address, Mezreh, Mamouret-ul-Aziz, Turkey in Asia.

Hardware.—All the ordinary forms of hardware are in demand here. Structural hardware, screws, hinges, door catches, etc., come chiefly from Germany. They are of a decidedly inferior grade. Cutlery is almost invariably of poor steel. Knives come chiefly from England; scissors, from Germany.

Tools.—There is a similar lack in the quality of the tools manufactured or brought here. Artisans and mechanics frequently express a desire for light, handy, strong tools, similar to those which occasionally find their way here from the United States. The tools necessary for repairing cotton gins would find a ready sale.

Lathes.—A few lathes for metal work have been imported from Europe, but fail to give good satisfaction. Several inquiries have been made for American lathes.

Bedsteads.—The population is coming more and more to use iron and, occasionally, brass bedsteads. A clumsy article is manufactured here, and a better grade is imported from Austria and Germany. There is an opening for light, strong bedsteads, which can be packed compactly and imported at a minimum of expense for freight.

Lamps.—The use of petroleum is becoming more and more widespread, not only in the cities, but in the outlying villages. Lamps of metal are in steady demand. The bulk of the imports is from Germany. The lightness and convenient adjustment of our lamps, however, invariably commend themselves to those who have had the opportunity to become acquainted with them.

Enameled ware.—The use of agate and granite ware for the kitchen and the household in general is steadily increasing. There is, however, a marked dissatisfaction with the poor grade of coating on the utensils of European make brought here, and the very limited service which they render. Enameled vessels of much size are totally lacking in these markets. The native population continues to use the rather costly old-fashioned copper kettles.

Toys.—The cheap German and Swiss toys brought here find a ready sale, as native families show much fondness for children. Inquiries are made, however, for the more tasteful and durable toys of American make. Those of rubber or metal construction would be in especial demand.

This consulate will gladly facilitate the efforts of manufacturers in the above lines.

THOMAS H. NORTON,
Consul.

HARPUT, *May 31, 1902.*

CONSUMPTION OF PETROLEUM IN TURKEY.

The use of petroleum is extending rapidly throughout Asia Minor, and is fast displacing all other methods of lighting. Russian petroleum is imported exclusively. The quality is so inferior to that of American petroleum that it would seem worth while for American exporters to make a determined effort to recapture the market, which formerly was largely in their control, despite the short distance from here to the oil fields of Baku.

The price of petroleum is now exceedingly low at the seaports of Turkey. It is rarely imported in barrels, the bulk of the trade being in tin cases containing 18 liters (4¾ gallons). The wholesale price of these cases on the coast is 8 piasters (32½ cents), or 6.8 cents per gallon. It retails at 10 piasters per case, or 8½ cents per gallon.

The price of petroleum at such interior points as Harput is more than doubled by the cost of transportation. It retails at about 21 cents per gallon.

These prices all include the tin container.

The growth in the production of petroleum in the Caucasus oil fields is unexampled in this part of the world. The yearly output in 1884 was 90,000,000 poods, or 1,625,000 short tons. In 1901, it was 675,000,000 poods, or 12,187,500 tons, an increase of 750 per cent.

During the same period, the production of petroleum in the United States has been slightly more than doubled.

THOMAS H. NORTON,
Consul.

HARPUT, *May 31, 1902.*

PERSIAN TEXTILE MONOPOLY.

Some three years ago, the Shah of Persia gave the Minister of State the exclusive right for fifty years to spin and weave cotton and woolen fabrics in that Monarchy. The concession permits the beneficiary to associate with himself either foreign or domestic capital and other aids.

A member of an Austrian weaving establishment has been requested to form an association for the exploitation of the Persian monopoly. Austrian textile manufacturers have a special interest in this matter, as they export $2,000,000 worth to Persia annually. Still, it is considered highly advantageous to Austria in sundry ways to form the proposed connection. It would presumably increase exports in general, especially of machinery to equip Persian factories. Should the connection with the monopoly go to some other country, the consequence, it is believed, would be disastrous to the Austrian textile industry by depriving it of peculiar advantages in buying Persian raw materials; besides, Austria's exports to Persia would be seriously affected.

Altogether, the project appeals strongly to popular favor, and preliminary steps toward the formation of the association are being taken.

FRANK W. MAHIN,
Consul.

REICHENBERG, *June 7, 1902.*

TRADE OF THE PELOPONNESUS.

Yesterday morning there sailed into the harbor of the Piræus, coming directly from America, the steamship *Amos*, of the Dutch-Levant Line, which discharged a variety of goods for the markets of Athens and Piræus, and ninety reaping machines of an improved design for Messrs. Ch. & M. Chrysophidos. This is the second boat of the same company which has carried a cargo of merchandise for the Piræus direct from America.

The above paragraph, which I have taken from the Athens press of this date, does not apply to this consular district, but I have taken occasion to quote it for the reason that it ought to be made to apply to the Peloponnesus as well as to other sections of Greece. In fact, it has been but a few months since we had direct shipments of copper sulphate to this port, part of which was carried by the new line which plies directly between New York and Greek ports, and it has only been because our exporters have not made the proper efforts that other direct shipments have not been made.

When the first steamer of the new combine between the Hamburg-American and Dutch-Levant lines was scheduled to sail from this port, I went to the local agency and inquired if this district was to be visited simply as an experiment or regularly. I was assured that the service, so far as the Greek export trade was concerned, was arranged primarily for this district, and that in like manner the direct service for imports would be looked after. Three steamers of this line have sailed direct for New York and Boston within the past six weeks, all of which have touched at the principal ports of the Peloponnesus. Within the same period, two others have made the trip between New York and Greece, although neither of these discharged cargo in this district, for the probable reason that they had nothing to discharge which could not better be forwarded from Athens. It was believed here that our exporters of sulphate of copper would be in a position to place several cargoes in this port during the season; and they probably could have placed them, as the need for copper sulphate proved to be pressing and the order filled early in the season by our exporters showed to great advantage in quality. But American firms have been handicapped in competing with Europeans because of the ability of the latter to meet demands within ten or fifteen days, and our people have scarcely succeeded in accomplishing anything since their first successful bids. A remedy for this ought to be effected, by establishing sources of supply in Europe; otherwise, exporters of this product can not expect to control anything but opening orders, which are small and lower in price than those placed later in the season.

In other ways, also, this district might be taken seriously by our exporters, and plans laid to gain trade in coal, iron and steel, electrical supplies, etc. Fully half the population of the entire country is centered in the Peloponnesus; there are numerous good harbors, ample railway communication into the interior, and a healthful development of industries throughout the district. Creditable strides, it is true, have been made by our exporters in the last two years. Various novelties have recently been introduced on a small scale; we have become a factor in the copper-sulphate market; the petroleum monopoly is still in American hands (although repeated efforts are being made by Russia and Roumania to supplant us); and American contributions to the equipment of the electric street railway in this city are prominent. Nevertheless, our imports into this district have not increased in proportion to the exports hence to American ports, and to offset the difference we ought to secure a part of the coal trade and a share in the wheat trade; we should control the market for copper sulphate, as well as that for petroleum, while our various steamship companies might profitably figure on oriental freights. This district alone will pay upward of $2,000,000 for the freight of its exports within the next twelve months.

FRANK W. JACKSON,
Consul.

PATRAS, *June 10, 1902.*

TRADE NOTES FROM CYPRUS.

Cyprus has once more a direct weekly steamship service to Egypt via Port Said. American exporters dispatching goods to Cyprus may forward them via the new America-Levant steamers to Alexandria, to be transshipped at the latter point for Larnaca, Limassol, Famagusta, or other Cypriote points.

Tenders are invited for the construction of the Famagusta harbor works and of a railway between Larnaca, Famagusta, and Nicosia. For this purpose, £350,000 ($1,701,000) are available. The harbor is designed to admit the largest steamers trading in the Levant. Cyprus needs a commodious, protected harbor.

In his speech to the legislative council at the opening of the present session, the high commissioner urged conservation of existing water supplies, and said that the Government was considering the opening of artesian wells.

Further improvement since my last report on this island* is observed in tree planting, in the construction of roads, in sanitary measures, in the development of the wine and silk industries, and in the negotiations for the establishment of an agricultural bank.

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*See ADVANCE SHEETS No. 1099 (July 29, 1901); CONSULAR REPORTS No. 253.

It is worth noting that a growing number of the young men of Cyprus attend the American College at Beirut, some of them being students in its school of commerce.

The exports of the island of Cyprus for the year ended December 31, 1901, amounted (less specie) to $1,555,600 and the imports during the same period (less specie) to $1,820,400, showing a small decline in both exports and imports, but more particularly in the export trade, due to last year's drought.

During the year, a Larnaca firm made efforts to establish connections with American exporters, and the correspondence will probably lead to some business in agricultural implements, irrigation machinery, windmills, iron and steel, hardware, wire nails, cotton drills, leather, wheat and wheat flour, and canned provisions, while skins, wool, and cigarettes are likely to be shipped from Cyprus to the United States.

G. BIE RAVNDAL,
Consul.

BEIRUT, *June 7, 1902.*

INTERNATIONAL EXPOSITION AT ATHENS.

Mr. C. S. Wilson, chargé d'affaires of the legation at Athens, under date of July 5, 1902, sends notice of the International Exposition of Industry, Commerce, Art, and Hygiene to be held in Athens, beginning October 15, 1902. The wish is expressed that American products and industries may be represented. Copies of the rules and regulations of the proposed exposition are inclosed. The following extracts are taken from the regulations:

The general classification will include (1) fishing and fish culture, salt and fresh water fishing—stock and attributes; (2) salvage, fire, accidents on and under land and sea; (3) alimentation, manufactured products of all kinds; (4) sports and hunting; (5) articles of fashion and novelties; (6) hygiene, urban, of dwelling houses, bodily, industrial, medical arts; (7) locomotion, carriages, electromotors, automobiles, bicycles; (8) industrial and decorative arts, fine arts; (9) industrial manufactures—extractive, chemical, textile, rubber, etc.; (10) liberal arts—photography, printing, book trade, instruments, scientific objects; (11) manufactories, machinery, agricultural products, forest cultivation, implements of husbandry, etc.; (12) social economy; (13) instruction, publicity, inventions, electricity, pyrotechnics, military art; (14) this group will include everything not classified in the above-mentioned groups.

The price of exhibition sites is fixed at 100 francs ($19.30) per square meter (1.196 square yards). Packages destined for the exposition are exempt from all customs duty and octroi. The maximum of food products will be 6.6 pounds for solids and six small bottles for liquids. Applications are to be addressed to the executive committee, Royal International Exposition of Athens, accompanied by half of the amount for sites and participation; the other half to be sent fifteen days after sending the exhibits. Efforts will be made to obtain transportation at reduced rates in the interest of exhibitors.

THE CLOCK AND WATCH TRADE OF AUSTRIA.

Clocks, and also watches to some extent, have been manufactured in Austria for more than two hundred years. Half a century ago, the wooden clocks of Karlstein, in Lower Austria, were as renowned as those of the Black Forest region and found a ready market throughout southeastern Europe. It is estimated that the Karlstein industry produced at that time from 60,000 to 80,000 clocks annually. Originally, the wheels of these clocks were made of peach wood which had been boiled in linseed oil. These wheels were carved by hand, and their cogs acted on small wire pins. When, however, the Black Forest industry substituted brazen for wooden wheels, the Karlstein clock makers were forced to adopt this innovation. Several small brass foundries were started, but it was soon found that the Germans, who had in the meanwhile learned to manufacture the new wheels by machinery, could undersell the Austrian founder in the latter's own territory. Karlstein's industry lost prestige, and about thirty years ago the leading manufacturers petitioned the Government to found in their city a horological school. Their petition was granted, and the first Austrian clock and watch maker's school, equipped with good machinery and skillful masters from the Black Forest, was opened at Karlstein in 1873.

The influence of the school has been far-reaching. To its graduates, who may be found plying their trade in nearly every city of the Empire, the Austrian pendulum clock and the celebrated Vienna regulator owe their excellence. But the school has not been able to instill into its students organizing capacity and modern enterprise. Not only do the Karlstein clock makers continue to import their wheels from Germany, but foreign clock manufacturers have been able to open branch factories in the very heart of the Austrian Empire. Furthermore, in spite of the fact that watch making in all its branches is taught in the Karlstein school, no attempt has ever been made to found a watch factory in this country.

IMPORTS.

The value of watches and parts of watches imported into the Monarchy in 1901 was 11,710,662 crowns ($2,377,264), and that of clocks and clock works 1,652,640 crowns ($335,486). The total number of watches imported was 611,818, of which 90 per cent came from Switzerland, 8 per cent from France, 1 per cent from Germany, and the remainder from Italy, Great Britain, and the United States.

During the same year, 40,685 watch cases were imported, their appraised value being 221,043 crowns ($44,872). Here, again, Switzerland led, with 35,526 pieces, and it is worthy of note that not a single case came from the United States.

The following table shows in detail the imports of watches and clocks and parts thereof for the year 1901:

Description.	Quantity.	Value.	
		Crowns.	
Watches.			
With gold cases.........pieces...	102,052	5,102,600	$1,035,828
With cases partly of gold.........do......	2,412	45,828	9,303
With gold-plated cases.........do......	53,716	539,375	109,493
With silver cases.........do......	266,483	2,931,313	595,057
With silver-plated cases.........do......	4,261	29,827	6,055
With other kinds of cases.........do......	182,894	1,197,364	243,065
Total.........	611,818	9,846,307	1,998,801
Watch cases.			
Gold.........pieces...	227	6,725	1,365
Gold-plated.........do......	7,064	37,174	7,546
Silver.........do......	23,719	142,314	28,890
Silver-plated.........do......	5,554	19,994	4,059
Other kinds.........do......	4,121	14,836	3,012
Total.........	40,685	221,043	44,862
Miscellaneous.			
Watch works.........pieces...	789	6,312	1,281
Pieces of watch works.........pounds...	20,062	637,000	129,311
Clock works.........do......	247,135	1,121,000	227,563
Wooden clocks.........do......	46,958	59,640	12,107
Other clocks.........do......	52,068	472,000	95,816
Total.........do......	366,223	2,289,640	464,797

Countries whence imported.

Description.	Germany.	Switzerland.	Italy.	France.	Great Britain.	United States.	Other countries.
Watches.							
With gold cases.........pieces...	1,013	100,714	20	88	38	66	113
With cases partly of gold......do......	25	2,379	1	6	....	....	1
With gold-plated cases.........do......	745	47,749	2	5,009	44	3	164
With silver cases.........do......	1,664	264,443	44	190	31	23	88
With silver-plated cases.........do......	61	3,540	3	612	24	18	3
With other kinds of cases......do......	4,201	131,665	28	45,322	168	1,388	122
Total.........	7,709	550,490	98	51,227	305	1,498	491

Countries whence imported—Continued.

Description.	Germany.	Switzerland.	Italy.	France.	Great Britain.	United States.	Other countries.
Watch cases.							
Gold......pieces...	65	157	....	....	....	....	5
Gold-plated......do......	16	6,976	....	72	....	....	....
Silver......do......	318	22,623	....	744	....	....	34
Silver-plated......do......	3	5,276	....	275	....	....	....
Other kinds......do......	131	494	....	3,439	....	....	57
Total......	533	35,526	....	4,530	....	....	96
Miscellaneous.							
Watch works......pieces...	3	786	....	....	....	....	....
Pieces of watch works......pounds...	6,173	9,700	....	4,189	....	....	....
Clock works......do......	232,144	2,645	....	12,385	....	....	....
Wooden clocks......do......	46,737	220	....	....	....	....	....
Other clocks......do......	35,053	7,275	220	6,173	1,543	1,102	661
Total......	320,107	19,840	220	22,747	1,543	1,102	661

It is difficult to understand why our people have not succeeded in securing a fair share of this trade. The superiority of American watches is now recognized throughout the civilized world, and yet not one in four hundred of the 600,000 watches imported annually into this country comes from the United States. One reason may, perhaps, be found in the fact that our trade finds it difficult to submit to the stringent assay regulations, which require all gold and silver ware, whether manufactured within the Empire or imported, to be examined and stamped by an imperial assay officer before it is placed on the market. These regulations also forbid the importation of plated cases, unless the layer of precious metal is so thin that it can readily be abraded with the touchstone. All standard plated, as well as the so-called filled, gold, and silver cases, in the manufacture of which America leads the world, are thus shut out from the Austrian market.

I fail to see any good reason, however, why watch works and solid gold and silver cases of American manufacture should not be able to compete in this market, or why of the 180,000 cases made of other than precious metals which are annually imported into Austria little Switzerland should furnish 72 per cent and the United States only the fifteenth part of 1 per cent, or why our excellent kitchen and alarm clocks should not be purchasable in as large a city as Trieste.

THE AUSTRO-HUNGARIAN TARIFF.

The duty which Austria-Hungary levies on watches and clocks and parts thereof is not excessive. It is in all instances specific, and ranges for watches from 14.5 to 48.25 cents apiece and for clocks from $4.825 to $48.25 per quintal (220.5 pounds).

The following table gives the tariff for all kinds of timepieces and parts thereof, together with discounts allowed for tare when duty is payable on gross weight:

Description.	Duty.	
	Florins.	
A.		
Watches:		
With gold or gold-plated cases.......each...	1.00	$0.48¼
With cases containing only a small percentage of gold, if from treaty countries.......each...	.75	.36⅛
With silver cases that are gilded or have gilded edges, rings, or knobs, if from treaty countries.......each...	.50	.24⅛
With other kinds of cases that are gilded or have gilded or plated edges, rings, or knobs, if from treaty countries.......each...	.30	.14½
B.		
With silver or silver-plated cases.......each...	.50	.24⅛
With silver-plated cases, if from treaty countries.......do......	.30	.14½
C.		
With other kinds of cases.......each...	.30	.14½
A.		
Watch cases:		
Gold or gold-plated.......each...	.70	.33¾
Partly gold, if from treaty countries.......do......	.45	.21½
Silver, gilded or with gilded or plated edges, rings, or knobs, if from treaty countries.......each...	.20	.09⅝
Other kinds, gilded or with gilded or plated edges, rings, or knobs, if from treaty countries.......each...	.10	.04⅞
B.		
Silver or silver-plated.......each...	.20	.09⅝
Silver-plated, if from treaty countries.......do......	.10	.04⅞
Other kinds, according to the material of which they are made.		
Other kinds, if from treaty countries.......each...	.10	.04⅞
Watch works:		
Works.......do......	.30	.14½
Parts of works*.......per quintal (220.5 pounds)...	50.00	24.12½
Parts of works, if from treaty countries*.......do......	40.00	19.30
Clocks:		
Clocks and clock works*.......do......	100.00	48.25
Of the Black Forest variety, if from treaty countries*.......do......	40.00	19.30
Steeple clocks or parts thereof†.......do......	10.00	4.82½

*Allowance for tare, 20 per cent if packed in boxes or barrels; 13 per cent if packed in baskets; 7 per cent if packed in bales.

†Allowance for tare, 10 per cent if packed in boxes or barrels; 5 per cent if packed in baskets; 4 per cent if packed in bales.

It should be borne in mind that the Austrian assay regulations require gold cases to contain at least 0.58 and silver cases 0.75 fine metal. Cases made of precious metal not coming up to the lowest legal standard are either broken up (in which case the metal is returned to the manufacturer or dealer), or if they have been imported, they may, at the request of their owners or importers, be returned to the country of origin. The assay regulations do not apply, however, to timepieces imported by individuals for personal use.

The products of manufacturers of well-established reputation, both native and foreign, are as a rule subjected to only a cursory examination when they bear authentic factory marks; but all gold and silver ware which comes into Austria without such a mark, or the reliability of whose manufacturer is suspected, must undergo an individual or piece test, which usually leaves a noticeable blemish on the article.

HOW TO FIND A MARKET.

American watches will not sell themselves, like American wheat or cotton. Their excellence and their comparatively moderate prices should be brought to the notice of foreign importers and dealers, and for this purpose letters and circulars in English are of little avail, as they usually go to the waste-paper basket.

Foreign agents, if intelligent, industrious, and reliable, may be employed to advantage at times, but they are rarely as efficient as American salesmen. Satisfactory and permanent markets for our manufactured goods can, in my opinion, be best established abroad by our own salesmen who are familiar with the customs and languages of the people among whom trade is sought. So far, comparatively little has been done in this direction. I believe that none of the great commercial nations of Europe employs as many traveling salesmen at home and sends as few abroad as the United States. This alone accounts for the fact that some of our most advanced industries are as yet practically without a foreign market.

It will surprise the Swiss watch and the German clock manufacturers when their American rivals decide to dispatch a few wide-awake drummers across the Atlantic to work up a trade for the American timepiece.

FREDK. W. HOSSFELD,
TRIESTE, *June 24, 1902.* *Consul.*

MARGARIN PRODUCTS IN AUSTRIA.

The law passed by the Austrian Parliament, October 25, 1901, regulating the traffic in butter, cheese, lard, and their substitutes took effect this month. The object of the law is to protect the producer against unfair competition and the consumer against fraud. The artificial butter made from oils and suet which has been sold by retail dealers as genuine butter can no longer be dealt in, except specifically and distinctly as margarin. All preparations of or from margarin must be labeled so as to show exactly what they are. The sale of mixtures of margarin and real butter is forbidden. To make recognition easier, 10 per cent of margarin must be sesame oil, which can be easily detected chemically. The outer sign of the substitute must be a broad, red stripe, and in addition to this an exact designation of the contents must appear on all wrappings and coverings.

FRANK W. MAHIN,
Consul.

REICHENBERG, *May 31, 1902.*

AMERICAN GOODS IN CROATIA-SLAVONIA.

The following information, collected by F. Laguardia, clerk at this consulate, regarding American goods in Croatia-Slavonia (provinces belonging to the Kingdom of Hungary), is transmitted for the guidance of American exporters to Adriatic ports and southeastern Europe.

The word "American" in itself is sufficient recommendation for articles in Croatia-Slavonia, and this alone gives a good opening for United States exporters.

Most of the machinery and manufactures on the market are of German make, but this does not mean that American wares are unknown. Machinery, bicycles, typewriters, cash registers, etc., are to be found, though in limited quantities. There is plenty of room for more, and there are good chances for pushing our sales if we enter the market at once.

We can not expect the Croatian manufacturer to fit his factory with American machinery, the merchant to use our typewriters in his office, the farmer to employ an American reaper, the people to wear our shoes, or an audience to listen to an Edison phonograph, by means of a mere stray catalogue that may reach here every now and then, or by the representation of an American firm through a German concern in Hamburg, or by selling to a Hungarian commercial traveler who tries to dispose of fifty other articles at the same time. It is surprising that so many of our goods have gained the Croatian market, in view of the circumstances, and it proves how highly American articles are esteemed by the consumers.

There is a good opening for all American machinery used in factories; for agricultural machines and implements, bicycles, automobiles, typewriters; for all American novelties; and for shoes.

Direct trade is advantageous to both parties. Our firms should send out capable agents, and the fact of their being Americans will gain them admittance where other agents selling the same article would not be received. They should speak German, if not also Serbo-Croatian, which is the language of Dalmatia, Bosnia, Herzegovina, and Servia.

As to conditions of sale, prices should be quoted c. i. f. Fiume.

Boxing or coating may be charged for extra, but at cost price. Machinery must be set up and installed and all preliminary instructions given by the seller free of charge. Buyers are willing to furnish pulleys, belting, countershafts, etc., and all necessary help for fitting. A specified time for shipment is generally set by the buyer.

Cash terms of payment are impossible; Croatian merchants are not used to them. Thirty days after a machine is set up, one-half of the price will be paid, the other half by three months' draft or the like. These are the only conditions which will receive consideration. In the case of other manufactures, similar conditions of sale are expected.

In Zagrab, the capital of Croatia-Slavonia, there are about twenty factories, including brick, cement plate, chicory, chemical, cigar (Government monopoly), furniture, liquor, leather, soap, paper, and machine factories. Some of these have American machinery. In the Agram Leather Factory the most important machines are from the Vaughn Machine Company, of Peabody, Mass. This firm has been commended for its practical and successful methods of selling its machines, and for sending American mechanics to install them.

The Savez Srpskih Zemljoraudnickih Zadruga (Servian Farmers' Association Union), with headquarters in Zagrab, is a union formed of all the Servian farmers' associations in the Austro-Hungarian Monarchy. Four years ago, the farmers of this province commenced to organize small aid associations, and at present there are about 150 such associations belonging to the above-named union. The associations share in the benefits of the union according to their relative strength and wealth. The union has connections with the Servian Bank in Zagrab, and the individual members can procure money, at a low rate of interest, with which to buy land, purchase farming machinery, etc., without signing a mortgage on their property. The members are, as it were, bondsmen for each other. If the crops are good, a member may return all of the borrowed money after the harvest, or only a part of it, and settle for the balance after the next harvest. Often, the farmer orders his machinery from the union, which pays cash for it and delivers it to the farmer under the same conditions. The union publishes an agricultural paper called the "Privrednik," which is issued twice a month to about 3,000 subscribers. The subscription price is 80 cents a year.

This province is noted for its corn, barley, wheat, hay, and other field products, live stock, and dairy products. As will be seen, reapers, thrashers, harvesters, and other farming machinery and tools, and slaughterhouse and dairy apparatus are needed generally, and Americans ought to supply them.

The union has not yet purchased American machines, but it is more than willing to do so, if any American house can compete with the Austrian firm Hofherr & Schrantz, which is now furnishing agricultural machinery at low prices. Americans should send representatives to conclude a contract with the union. A good advertisement in the union's paper would be found profitable. European firms have standing illustrated advertisements. Dairy machines are needed in large quantities, especially separators and churners. A German firm is monopolizing this branch of machinery at present. A light, strong, and cheap plow would also sell well. Firms wishing to do a regular business should have a branch office in Croatia, with a stock of all the required implements, preferably at Mitrovica, the center of the farming region of Slavonia. Machines must not be too complicated; the simpler the better.

Frank Dyer Chester,
Budapest, *June 18, 1902.* *Consul.*

HUNGARIAN MINISTRY OF COMMERCE.

The following has been received from Consul F. D. Chester, of Budapest, under date of May 26, 1902:

The Royal Hungarian Ministry of Commerce has a large field of work. By virtue of a law of 1889, it has charge of all matters relating to industry and commerce, postal and telegraphic matters, public works, transportation, and navigation (except the regulation of water ways), canalization, etc. It administers all foreign and internal commercial tariffs, except matters of internal revenue, which come under the supervision of the Ministry of Finance. It is now proposed to separate the railroad section and perhaps also the postal and telegraphic section, and to create ministries for these departments.

The organization is as follows: Minister of Commerce, two assistant secretaries—one parliamentary, the other administrative—and councilors having charge of the various sections, which are nine in number. Section 1 has charge of county and town roads; section 2, State roads; section 3, Danube bridge matters; section 4, marine and internal navigation; section 5, railroads; section 6, railroad tariffs and matters pertaining to foreign commerce (including Austria), consular matters, and publication of consular reports; section 7, posts, telegraphs, and telephones (this section is almost independent in its action, using the title "Managing Bureau of Posts and Telegraphs" in its correspondence); section 8 deals with industrial matters falling under the various laws of industry and with matters of internal commerce, cooperative unions, trusts, insurance, patents, trade-marks, registry of firms, weights and measures, pawn shops, etc.; section 9 has charge of all matters affecting the working classes, except servants and agricultural laborers; it is especially concerned with the questions of developing industry, compiling industrial statistics, protecting employees, supervising industrial education, commercial museums, agencies, expositions, and the like.

The Ministry of Commerce has also its own auditing offices and a section which attends to distributing letters for the several sections, administrative and economic matters, spending of appropriations, preparation of the yearly budget and accounts, granting of railroad passes, postal-savings-bank matters, obtaining dispensations in time of war, registering resolutions of Parliament, etc.

COOPERATIVE ASSOCIATIONS IN HUNGARY.

The following is translated from a statement drawn up by a gentleman connected with the Central Credit Cooperative Association, who prepared it for the information of certain English agriculturists:

In Hungary, the organization and activity of cooperative associations are regulated by the commercial law of 1875 and by the new cooperative-association law, passed in 1898.

The commercial law of 1875 leaves a wide field for the activity of cooperative associations, and does not limit their dealings to their own members alone.

The law of 1898 prescribes narrow limits both with respect to the field of activity and to the circle of dealings, similar to the regulations existing in Germany; on the other hand, it assures to the associations privileges of tax and stamp exemptions and certain advantages in validating claims, and it establishes a capitalizing center for the associations, which exercises the rights of supervision and control. This center is the National Central Credit Cooperative Association.

Only such associations can unite with this center as are based upon the new law.

The foundation capital of the central association is raised by the founders and by its members. The founders contributed 4,182,000 crowns ($848,946) and the members 785,000 crowns ($139,055). The State entered the list of founders with 1,000,000 crowns ($203,000), and by reserving to itself the right of appointment of the president, the two vice-presidents, and two directors, and the approval of the election of the managing director, it exercises a deciding influence.

In the last three years, 1,328 cooperative associations have united with the National Central Credit Cooperative Association, with 270,000 members, who subscribed for 560,000 shares, of a value of 27,500,000 crowns ($5,582,500).

The members make use of the credit by means of notes or obligations, and when the associations are unable to meet the demands from their own capital they indorse the notes in their hands (portfolios), assigning the obligations to the central association.

The money resources of the National Central Association are the foundation capital of about 5,000,000 crowns ($1,015,000); State and other savings deposits, to-day about 11,000,000 crowns ($2,233,000) in value; proceeds of interest-bearing bonds emitted under legal authority, to-day about 11,000,000 crowns ($2,233,000) in value; and, finally, rediscount of notes.

The small cooperative associations have afforded their members, up to to-day, about 56,000,000 crowns' ($11,368,000) credit, of which they covered about 19,000,000 crowns ($3,857,000) from the deposits of their more wealthy members and borrowed the rest from the central association.

The 1,328 cooperative associations attached to the central association are, with few exceptions, credit associations, 1,250 being distinctly economic and about 70 industrial in character.

Of the industrial associations, about one-half are cooperative associations for obtaining and producing raw materials.

Among the economic associations are those for the sale of wine, grain, and other products.

FRANK DYER CHESTER,
BUDAPEST, *May 26, 1902.* *Consul.*

MALTESE TRADE OPENINGS.

FLOUR.

The present opportunity should be taken advantage of by those interested in exporting flour to Malta. Of late, wheat imports from the United States have fallen off, but this decrease has been met by a corresponding gain in the manufactured product. In the opinion of local merchants, the new duties imposed in England will stimulate trade with the United States. English flour has for the past three or four years been our greatest competitor here, and it will be readily seen that our product, when sent direct, will enjoy a slight advantage. Within the past few weeks, several merchants who have always dealt largely in English flour, and have seldom bought American, have sent orders to the United States. One large baking establishment, which I could never seem to interest in our goods, has received a shipment by the latest direct vessel from New York. Others are soon likely to follow. Previous to 1899, when we had no direct communication, local statistics fail to show the arrival of any American flour, the small imports being credited to the English or Italian port of transshipment. During that year, and since, the demand has grown. The following table of imports of flour at Malta shows the progress we have made. Statistics for this year will show a further increase:

Place of export.	1897.	1898.	1899.	1900.	1901.
	Bags.	*Bags.*	*Bags.*	*Bags.*	*Bags.*
New York			2,256	39,586	37,047
Liverpool	17,553	54,111	168,418	185,600	187,346
Marseilles	16,268	10,037	15,181	26,077	8,251
Trieste	268	1,742	1,494	637	1,373
London	2,165	3,240	3,855	2,183	10,575
Syracuse	27	760	1,765	1,596	5,544
Lisbon					12,862
Manchester	10,899	26,206			
Total	47,180	96,091	192,969	255,679	262,998

CORN.

A vessel arriving here yesterday from New York brought a small quantity of corn. This is the first American corn landed at Malta for many years, and the fact that it was promptly sold upon arrival leads me to believe that it will soon be brought regularly. The people of the island are not very well acquainted with our cereals, but there is no reason why they should not become so.

CARRIAGES AND HARNESS.

An experimental order just received here has proved disappointing. Several carriages and sets of harness are now en route for Malta from the United States, but if upon arrival they do not prove more satisfactory than those received this week, I fear we shall not do much business in these lines. The catalogues from which the order was made up held out many inducements, and the buyer was led to expect better finish and material than were realized. Had these goods been satisfactory, a duplicate order would have been promptly sent. It would pay some of our exporters to exercise more care in the preparation of goods that are ordered experimentally.

SODA FOUNTAINS.

It would appear that the American soda fountain is about to invade Malta. One of the most prominent druggists here is soon to remodel his store, and has asked me to supply him with illustrated catalogues, not only of fountains, but also of the necessary machinery for charging the water. I feel confident that if this fountain is installed, others will follow. Any printed matter upon this subject that may be sent me will be handed to the person referred to. In quoting prices, give lowest export terms f. o. b. New York. I would suggest that matter appertaining to sirups be also sent.

ELECTRIC GOODS.

Of late, I have been receiving letters from American houses dealing in various lines of electric goods. This is not a very large field for these articles. The supply of electric energy is under the control of a Government bureau, which has a plant providing light for the streets, public buildings, and many private houses. The alternating current voltage in consumers' premises is about 100 volts; the periodicity is about 100 cycles per second. There is no direct current used in the islands. Apart from illumination, there is very little demand for electric goods.

COMMERCIAL TRAVELERS.

Two representatives of American houses have been here lately, for the purpose of making a study of trade conditions, and I am informed that their visits have been highly satisfactory. One of them told me that he could never understand why his house did not obtain more trade from Malta, but his visit had so equipped him with knowledge of conditions that he would have no difficulty in increasing the trade. I would like to see here the representative of one of our large hardware houses, as, if he brought samples, I believe he could lay the foundation of a good business. I am in the habit of taking great pains with this class of visitors, in order that they may meet the most desirable merchants.

COMMERCIAL MUSEUM.

Malta, of course, is but a small place; all of the business is done in the capital city of Valletta. It must be remembered, however, that this island is a good distributing point. Steamers leave here daily for all parts of the Mediterranean and the trade is more important than would otherwise be the case. If some of our merchants could unite in opening a small commercial museum here I believe it would be productive of good results. Rents and labor are very low, and, outside of the cost of sending samples, the individual expense would not be great. Some years ago, this plan was put into operation by the local representative of Austria-Hungary. An exhibit of various lines of goods was made, and, although it was open but a few months, it created a great deal of interest, and as a result certain lines of Austrian goods have become standard here and are to be found in many of the stores. Especially is this true of bent-wood furniture. The people of Malta are rather favorably inclined toward our goods, but many hesitate to experiment with first purchases. If they could visit a place here and inspect samples of the goods desired, it would no longer be a matter of experiment but of certainty. I offer the suggestion for what it is worth, and will be pleased to give any further information required.

JOHN H. GROUT,
Consul.

VALLETTA, *May 28, 1902.*

AMERICAN GAS COAL IN ITALY.

A recent demonstration of new gas lighting in this city brought out several points of interest to American coal exporters and also to manufacturers of gas-burners and lamp supplies. One of the gas companies in this city decorated the leading avenue in the Valentino Park (in which the Exposition of Modern Decorative Arts is in progress) with Welsbach lamps. The exhibit aroused great admiration. Gas is furnished to consumers here at a certain price, governed to an extent by the cost of standard coal—called the "New Pelton"—in England. The price now charged is 5.75 lire (about

$1.10) per 1,000 cubic feet, which is lower than that in almost any city of Italy.

Until about two years ago, American coal was scarcely known in Italy. A cargo was then imported into this city, and it proved so satisfactory that the local gas companies during the past year purchased some 25,000 tons. They claim that the American coal possesses more volatile matter than any other coal and that it makes better and more gas, and have issued an official statement to that effect.

The great distance is the only drawback to the use of our coal in this market. I am informed that the gas companies paid as much as $1 per ton extra for the American coal that they have employed, and that if the difference were only 30 cents per ton they would prefer it to all others.

Not only did this illumination develop the fact that American coal makes better gas than that produced in England, but it also showed that the globes, mantels, burners, etc., were mostly supplied by American manufacturers.

I may note in this connection that I have seen many articles of American origin in this city, such as sewing machines, cash registers, bicycles, sausage grinders, lawn mowers, typewriting machines, tools, and machinery, but I have not seen a single revolving office chair of American or any other make.

PIETRO CUNEO,
Consul.

TURIN, *May 27, 1902.*

ADMISSION TO ITALIAN ART GALLERIES.

The Department has received from Mr. L. M. Iddings, secretary of the embassy at Rome, under date of June 18, 1902, copies of the new regulations issued by the Royal Department of Public Instruction in Italy in regard to the free use of galleries, museums, national monuments, etc., throughout the Kingdom.

The regulations read:

> ARTICLE 1. The following persons shall be exempted from paying entrance fees at the museums of antiquity, galleries of fine arts, picture galleries, archæological excavations and monuments: (*a*) National and foreign artists; (*b*) students of the history of the arts and of artistic criticism—Italian and foreign—who have published remarkable works; (*c*) soldiers and sailors; (*d*) professors, national and foreign, of archæological, historical, literary, and artistic instruction; (*e*) professors of universities, of preparatory schools, classical, technical, and governmental, and normal schools; (*f*) alumni of archæological institutes, historical and artistic, both national and foreign, of the faculty of letters and philosophy, and of the schools for engineers; (*g*) officials charged with the administration of antiquities and of fine arts; (*h*) artisans belonging to industries analogous to the arts of design; (*i*) guides

who shall have obtained, after examination, a certificate proving their proficiency in archæologic and artistic knowledge.

ART. 2. Persons fulfilling the conditions of article 1, who may desire to obtain a permit for free entrance to the archæological and artistic institutes of the Kingdom, must be furnished (*a*), for Italian artists, with an academic document attesting their identity, excepting in case of persons known for eminent merit; (*b*) for foreign artists and for foreign professors of archæological, historical, literary, and artistic instruction, with an academic document visaed by the diplomatic representative or by the Italian consul in the nation to which the artist or professor belongs, or by their ambassador or minister at Rome; (*c*) for students of history and of artistic criticism, with some one of the works they have published; (*d*) for professors of universities and of national, archæological, and art schools and for professors of classical, technical, and governmental or normal schools, with a document proving their identity when recognition may be necessary; (*e*) for alumni of archæological and national artistic institutes, for those of the faculty of letters and philosophy, and of the schools for engineers, with an official document showing their registration in the above-mentioned schools in the year in which they ask the permit; (*f*) for foreign alumni, such documents must be visaed in the prescribed manner by foreign artists and professors; (*g*) for artisans belonging to industries related to the arts of design, the demand should be accompanied with a certificate proving their idenity and coming from the director of an institute of fine arts or some other public authority.

ART. 3. The professors and students of foreign archæological and artistic institutes established in Italy may obtain the permit for free entrance through the principal of the institute.

ART. 4. Pupils of national schools and institutes of education and instruction may, accompanied by their teachers, visit gratuitously the museums, galleries, excavations, and monuments, a previous arrangement having been made between the director of the school and the director of the museum, gallery, etc., to be visited. Soldiers must be in uniform.

ART. 5. Persons desiring a general permit for free admission to all the museums, galleries, excavations, and monuments of the Kingdom shall make a request to the Minister of Public Instruction on stamped paper of 1.20 lire (23 cents), accompanied by the documents required by articles 2 and 3, and an unmounted photograph of themselves, of dimensions not greater than 5 by 8 centimeters (1.9 by 3.1 inches).

ART. 6. Persons desiring free admission to the archæological and artistic institutes of a single city will make their request on stamped paper of 0.60 lira (12 cents) to one of the heads of said institutes, accompanying it with the documents required in articles 2 and 3, and if the permit is asked for more than a month, with the portrait according to the preceding article.

ART. 7. The examination of the certificates for guides must be effected before a commission in each city where there are archæological or artistic institutes or offices of the State, according to the measures which shall be prescribed by the Minister of Public Instruction. The permit to guides is restricted to the institutes and places for which they shall have been recognized as fitted.

ART. 8. Tickets for free entrance, issued before the date of the present decree, shall be valid to the end of the time for which they shall have been granted.

ART. 9. The provisions contained in articles 9 and 12 of the regulation for the collection of the entrance fee into national museums, galleries, excavations, and monuments, approved by royal decree June 11, 1885, are abrogated.

SUGAR PRODUCTION IN SPAIN.

The following table, showing the sugar production of the Spanish Peninsula for 1901, with comparative figures for 1900, has been received from Consular Agent A. E. Carleton, of Almeria:

Spanish sugar statistics.

Article.	Production.		Increase.	Decrease.
	1900.	1901.		
	Tons.	*Tons.*	*Tons.*	*Tons.*
Cane sugar on hand January 1, 1901		4,468	4,468	
Beet sugar on hand at same date	13,491	25,753	12,262	
Total	13,491	30,221	16,730	
Cane sugar produced from January 1 to December 31	33,217	27,645		5,571
Beet sugar produced for same period	59,629	58,489		1,140
Sorghum produced for same period	221	109		111
Total	93,067	86,243		6,822
Cane sugar sold during each year	28,749	29,471	722	
Beet sugar sold for same period	47,366	56,769	9,402	
Sorghum sold for same period	221	99		122
Total	76,336	86,339	10,124	122
Cane sugar on hand December 31	4,468	2,641		2,808
Beet sugar on hand at same date	25,753	27,473	1,719	
Sorghum on hand at same date		10	10	
Total	30,221	30,127	1,729	2,808
Résumé.				
On hand January 1	13,491	30,222	16,730	
Produced during the year	93,067	86,243		6,822
Total	106,558	116,465	16,730	6,822

FRENCH CURRANT WINE.

The currants mostly employed in France for making wine are the Corinth, which come directly from the famous Peloponnesian Peninsula; the Thyra, which is exported from Asiatic Turkey, especially Smyrna; the Samos, from the Greek island of the same name; and the Vourla.

Wine made from currants is always of a pale color, though the currants are red. The reason is that desiccation tends to destroy the coloring matter.

In France, the Corinth currants are considered the best for wine, and the process is as follows: The fruit is placed in water in order to recover the moisture lost by drying. The quantity of water is determined by the degree of alcohol desired. It is said that usually 100 kilograms (220.46 pounds) of dried Corinth currants contain enough sugar to give 30° or 32° of alcohol. When 100 kilograms are used, 150 liters (39.615 gallons) of water give 19° to 22°; 175 liters (46.219 gallons) of water give 16° to 18°; 200 liters (52.834 gallons), 14° to 15°; 225 liters (59.438 gallons), 13° to 14°; 250 liters (66.042 gallons), 12° to 13°; 275 liters (72.646 gallons), 11° to 12°; 300 liters (79.251 gallons), 10° to 11°; 325 liters (85.855 gallons), 8° to 10°.

The water is placed in the vat and the currants are poured in, care being taken to scatter them well, as otherwise the water can not penetrate the coagulated fruit, and considerable alcohol is lost. The temperature of the room should be from 15° to 20° C. Fermentation begins at once, and during the first two days it is only necessary to stir the fruit, scattering the masses and immersing the covering of currants which comes to the top, called the hat. This porous mass acidifies rapidly when in contact with the air, and should never be allowed to remain exposed; the vat should be covered with cloth.

The fermentation is finished in ten or fifteen days; in winter, the time is usually longer. When the temperature of the must in the vat is no more than 21° C., fermentation usually ceases. To be mathematically sure, however, there is employed in France an instrument called the Salleron mustimeter, by which one can tell exactly how much sugar remains. Usually, after the fermentation ceases, the wine is left for twenty-four hours.

After the liquid is drawn off, it undergoes a slight fermentation, which finishes the operation. All the water that has been absorbed by the currants should be pressed out quickly, in order that the skins may be in contact with the air as short a time as possible. The wine from the press, when clarified, can be mixed with that of the first jet. The skins themselves, it is said, make an excellent brandy, or they can be used as manure or as feed for animals.

This wine, although it has fermented regularly, is more likely to undergo secondary fermentation than wine made from fresh grapes. All likelihood of this should therefore be destroyed by burning a little sulphur in the barrel before the wine is put away. As the product contains very little tannin, for the reason that the dried currants have no stems and some of them are also seedless, 5 to 6 grams (77 to 92 grains) of tannin are usually added to each hectoliter (26.417 gallons).

THORNWELL HAYNES,

ROUEN, *June 9, 1902.* *Consul.*

MINING IN FRANCE.

A recent report of the Minister of Public Works to the President of the French Republic contains interesting information regarding the coal, iron, and other mining industries of France, a résumé of which is as follows:

Under the mining law of April 21, 1810, the prospecting for and the exploitation of mineral riches were left entirely to private parties, to whom concessions were granted by the Government when there was a reasonable presumption that payable veins existed. A concession being granted, the rôle of the Government was confined merely to the imposition of measures necessary for the preservation of the mine, the protection of the surface of the ground, and for securing the safety of the miners. In certain cases only could the proprietors of the mines be prosecuted for not working their properties.

The execution of the law, modified by that of July 27, 1880, was left to the prefects of the Departments, assisted by the local mine inspectors, the Central Government merely having general supervision. At various periods since then, circulars have been issued by the Government giving details and stringent rules for the handling of explosives under ground, for the preservation of mining machinery and the methods of running same, which, in the opinion of the minister, have reduced to a minimum the risks inherent to the mining industries. Grave objections having been raised to the gratuitous granting of concessions, it is the present practice to ask bids for the concessions and to let them to the highest bidder, preference being given to the discoverer of the mine.

By the decree of 1848, the legal length of a day's work in the manufacturing and other industries was fixed at twelve hours. It was thought, however, notwithstanding the limitation of working hours prescribed in certain cases by the law of 1900, that the length of a day's work for those engaged in the extractive industries should be the subject of an investigation. For this purpose, a commission was appointed in June, 1901, by the Minister of Public Works, consisting of members of his Department and representatives from the mine proprietors and miners. The committee, assisted by the engineers of the corps of mines, made an extensive inquiry as to the number of working hours per day performed by the miners in the different mines throughout France and the conditions under which the work was done. The principal subjects investigated had reference to—

(1) The application of the double shift to miners of coal, and the possibility of its extension, in order to increase the coal production.

(2) The development of the preparatory work and first establishment of coal mines to increase the production.

(3) The use and development of mechanical drills to increase the individual output and, thereby, the total production.

The results of the inquiry were discussed by the Chamber of Deputies and a bill was passed by that body, which was referred to the Senate, which is now investigating the subject.

According to the new law, the number of hours constituting a day's work in coal mines will, at the end of a certain number of years, be reduced to eight, with two transitory periods of two years each, during which the maximum length of a day's work would be nine hours and eight and one-half hours, respectively; the length of the day's work to be counted from the last descent into the mines to the first ascent. The bill, as passed by the Chamber of Deputies, provides, under certain conditions, for the increase of the number of hours of a day's work, either for all the mines or for certain category only.

At the end of the year 1901, the number of mining concessions existing in France was 1,463, of which 643 were granted for the extraction of combustibles, as will be seen in the following table, giving detailed information concerning concessions for the past three years:

Mining concessions in France.

Mines.	1899.		1900.		1901.	
	Number.	Increase.	Number.	Increase or decrease.	Number.	Increase.
Mineral combustibles	637	3	640	+ 3	643	3
Iron ore	335	9	342	+ 7	343	1
Other metallic ores	320	6	323	+ 3	329	6
Various substances	89	....	88	− 1	88	....
Rock salt	59	....	59	....	60	1
Total	1,440	18	1,452	+ 12	1,463	11

The variation in the number of concessions from year to year is due not only to new concessions being granted, but also in a small proportion to the abandonment of former concessions, or to the consolidation of several concessions. In the above table it will be seen that the mining of mineral combustibles embraces a large proportion of the concessions granted.

Of the 178,894 workmen employed in all mines in 1900, 169,079, or 86 per cent, were engaged in mining coal and lignite.

Not considering the year 1900, when the price of coal was abnormally high, the value of the output of all mines at the pit mouth was 451,000,000 francs ($87,043,000), of which 409,000,000 francs

($78,937,000), or 90 per cent, were mineral combustibles. The principal French coal basin, which is located in the Departments of Nord and Pas-de-Calais, produces 20,000,000 tons of the 33,000,000 tons mined in France annually, or about two-thirds of the total output. The extraction of coal in the Department of Nord remains practically stationary, while the production of the mines of the Pas-de-Calais is increasing annually. From 1886 to 1900, the annual increase has been 650,000 tons, with every indication of its continuing.

The coal basin of St. Etienne, which comes second, is much less important than the above. Its output of 4,000,000 tons—about 12 per cent of the total production—does not show any marked increase. Then follow the basins of the Centre and of the Midi, which have a comparatively small output. The most important mines in these districts—those of the Gard and of the Bourgogne—produce about 2,000,000 tons each, or 6 per cent of the total output, and they do not increase their production from year to year to any great extent. Certain of the coal basins of France—that of Allier, for example—show unmistakable signs of a still further decrease in their output without the prospect of any betterment from new explorations.

The production of iron ore in France is centered principally in three districts; that of the northeast, or the Meurthe-et-Moselle, is the most important, producing 4,500,000 tons of the 5,500,000 tons of iron ore mined in France annually; that of the Pyrenées producing 250,000 tons; and that of Normandy, 150,000 tons. The latter may be said to be in its infancy. From its geographical position, its ores are generally sent to foreign countries, while the ores produced in the other districts are consumed by the metallurgic industries of France.

Of the other mines producing metallic ores may be mentioned those of Sain-Bel (Rhône), with an output of 300,000 tons of iron pyrites, and three lead and zinc mines of Malines (Gard), Sormettes (Var), and Pontpéaus (Ille-et-Vilaine), producing 28,000, 20,000, and 14,000 tons, respectively, of merchantable products (blende and galena).

The "various substances" mentioned in the table comprise bituminous schist, calcareous asphalt, sulphur, or marl impregnated with sulphur.

The extraction of rock salt for household purposes shows no increase, remaining stationary at 300,000 tons; for making soda, it ranges from 550,000 to 600,000 tons yearly.

In the following table are shown the coal consumption and production for the past six years, not including the exports of native coal, which amount to about 1,000,000 tons annually.

Consumption and production of coal in France for the past five years.

Year.	Consumption.			Production.			Ratio between production and consumption.
	Total.	Increase or decrease over previous year.		Total.	Increase or decrease over previous year.		
	Tons.	*Tons.*	*Per cent.*	*Tons.*	*Tons.*	*Per cent.*	*Per cent.*
1897	41,850,000	+1,850,000	+4.4	30,800,000	+1,600,000	+5.5	73.6
1898	43,300,000	+1,450,000	+3.4	32,350,000	+1,550,000	+5.3	74.7
1899	45,200,000	+1,900,000	+4.3	32,150,000	− 500,000	−1.6	72.6
1900	48,800,000	+3,600,000	+7.9	33,400,000	+ 550,000	+1.6	68
1901	46,450,000	−2,350,000	−4.8	32,800,000	− 600,000	−1.8	70

From this table it will be seen that since 1898, with the exception of 1900—which was an abnormal year—the production of coal in France has not shown the normal annual increase.

The falling off in 1901 was due to the decreased demands caused by the unsatisfactory condition of the metallurgic industries of France and other European countries.

The period from 1899 to 1901 was one of the most favorable that the coal industry of France ever enjoyed. The prices went up slowly at first, but at the end of 1899 they rose rapidly until the autumn of 1900, when they commenced to fall again. The average rise was from 10 to 12 francs ($1.93 to $2.32) per metric ton, an increase of from 30 per cent to 120 per cent, according to the kind and quality of the coal. The "run of the mines" Pas-de-Calais coal rose from 11 to 12 francs ($2.12 to $2.32) per metric ton to 23.50 francs ($4.54), and afterwards fell to 15 francs ($2.90), which is from 3 to 5 francs (58 to 96.5 cents) above the average normal price. The above-mentioned prices are those for which coal for immediate delivery was sold at the mine, or for which new contracts would be made; but, owing to old contracts for long periods entered into between the proprietors of mines and large consumers, the former did not receive all the benefits of the rise in price. It is estimated that the average price of coal in France during 1900 was 14.95 francs ($2.885) per metric ton, or about 5 francs (96.5 cents) above the lowest market prices of 1896 and 1897. The average price in 1901 was not materially different from that of 1900.

The rise in the price of coal was attended by a correlative increase in the wages of the miners. In the Departments of Nord and Pas-de-Calais this increase was 25 per cent, and in the center and south of France from 5 to 9 per cent.

The number of accidents in the coal mines in France was slightly increased during the past few years, but it is less than those in the mines of neighboring nations.

Among the many causes for the increase in the mortality rates may be mentioned the employment of a greater number of unskilled workmen, who were victims of their own inexperience.

The increasing demand for combustibles, the high prices prevailing, and the profits earned by the mine proprietors have stimulated the researches for other coal-bearing properties. Some twenty soundings have been made to the southward of the coal basin of the Pas-de-Calais, some of which extend 1,000 meters below the surface.

In the Gard, Saône-et-Loire, Haute Loire, and the Tarn, soundings were also made, but in no case were the results encouraging.

From July 1, 1899, to December 31, 1901, 41 new concessions were granted, as follows: Seven for mining coal, with a surface of 7,751½ acres; 17 for mining iron ore, with a surface of 31,142 acres; 16 for mining other metallic ores, with a surface of 36,197 acres; and 1 for mining salt, with a surface of 4,354 acres.

Of the above concessions, the most important are those granted for mining iron ore in the Landres district, embracing over 24,000 acres of land containing ore of remarkable richness and quality; the concession for the coal mine of St. Germain (Puy de Dôme) in the new coal basin of La Bouble; the coal mine of St. Martin de Valgalgnes (Gard), located upon a recently discovered prolongation of the coal basin of Alois; and the three concessions of 5,906 acres for mining iron ore in the Normandy district.

Of the 1,440 concessions existing in 1899, 808 were unexploited. The latter were divided as follows: Coal mines, 301; iron mines, 248; other metallic ores, 186; salt mines, 15; and various mines, 58.

Of the above, 196 mines, after investigation, have been found to contain no veins which would produce paying results.

A. M. THACKARA,
Consul.

HAVRE, *June 11, 1902.*

DEMAND FOR AMERICAN HORSES IN FRANCE.

American horses are in demand in France. The French army purchases annually a large number of these animals, and on the farms they are gradually displacing cattle for draft purposes. For many years the soil has been cultivated almost entirely with the aid of cows and oxen, but for this work the superiority of the horse is fully acknowledged. The introduction into France of American agricultural machinery—such as mowers, reapers, drills, rakes, etc.—has also led to the use of horses in greater number than ever before. The exodus of laborers from the farms to the cities is still another explanation of the increased demand for draft animals. This exodus is also responsible for the increasing use of farm machinery. The scythe is giving place to the mower, the old-fashioned method of sowing to the modern drill, and these machines are worked best by horses. A leading agriculturalist stated recently that "the demand for agricultural machinery to replace hand labor on the French farms will be greater this year than ever before."

The importation of horses from Argentina and Russia has not been entirely successful—the mortality en route, the high freight rates, and the great change in climate (with regard to horses shipped from South America) make the selling prices in France almost prohibitive.

Colts 3 to 4 years old have been successfully imported from the United States. When shipped at this age, the animals are less liable to injury and less susceptible to climatic changes. Care should be taken to send only sound specimens. Upon arrival at French ports, the animals are carefully examined by veterinarians, who exclude all in any way defective. Closer attention should also be paid to the shipping of the horses, many of which arrive in a deplorable condition. Arrangements should be made for properly caring for the animals after they reach their destination. This could readily be done, and the expense incurred would more than be made up by the increased prices that would be obtained.

WALTER T. GRIFFIN,
Commercial Agent.

LIMOGES, *June 23, 1902.*

AMERICAN COAL AND THE FRENCH MARKET.

The fact that much of the fuel used in France has to be imported, at an exceedingly high price, has led the French to make minute calculations of the relative value of the various combustibles they employ. In some localities, there is a strong conservatism which opposes the use of any product unknown in a practical way. The result is that our coal has been looked upon with more or less suspicion and many unfavorable prejudices have been created (1) by first appearances, due to the ignorance of our exporters as to the needs of the French market; (2) by analyses which, theoretically, showed a too small percentage of carbon and too much volatile matter, judging from experience with European coals.

It has been found in practice, however, that to some degree appearances were deceptive and the theory incorrect, as shown by the opinions of seven persons as to the quality of American coal. These persons are either highly connected with railway lines or with large manufacturing concerns which have burned American coal. The first claimed that it was inferior in caloric force, as compared with newly mined South Wales coal; the second, that he found the combustion in the grates of his factory too rapid; the third, that the lumps fell to pieces when touched by the stoker (he admitted that his men may not have made the most of it, as they were not accustomed to such coal); the fourth declared that the coal was too friable; the fifth stated that for locomotives, other conditions being equal, there was no noticeable difference between the samples of American coal tried by him and the best Cardiff; the sixth was persuaded that this coal could easily replace the best Welsh; while the seventh person had learned that American fine coal was worth 10 per cent more than Cardiff "menu," because it did not run to fine dust when broken, but consisted largely of particles the size of pease.

The French classification of coal used here is as follows:

(1) "Tout venant" ("run of mine" or "through and through"). To the French purchaser, the signification is not the same as to the American seller; it means here coal that contains not more than 30 per cent of fine.

(2) "Menu" (fine coal), which contains 30 per cent of lumps. The rest consists of dust and particles small enough to pass through a mesh of 25 millimeters (0.98 inch).

American coal, on its arrival in France, has usually been so badly broken as to contain as high as 85 per cent of fine. This places our coal on a par with Cardiff menu, so far as the proportion of lumps is concerned.

The prices are determined by classification and quality. As the general opinion of the railroads is that the quality is of the best, there remains only the question of classification. One railroad officer writes me that "the price should not exceed at any time that of Cardiff coal, quality being equal."

If our mine owners are content to sell their coals as menu in France, they can easily secure the market, but the buying price is low. One railroad official tells me that his company recently purchased 115,000 tons of menu at 15.50 francs ($2.99) the ton, delivered in cars alongside and duty—1.30 francs (25 cents)—paid by the sellers. These people could have paid 17 francs ($3.28) for American menu under the same conditions.

Should our exporters wish to sell coal with 70 per cent large, they may be governed in price by the current value of best Cardiff.

The following conditions will usually fulfill the requirement of any French railway contract:

Water	per cent	1
Volatile matter:		
Minimum	do	18
Maximum	do	24
Ash	do	9
Caloric force (minimum)	calories	8,000

As to consistency, the coal should contain on delivery at destination not more than 30 per cent menu, it being understood that all that passes through a sieve with holes 25 millimeters (0.98 inch) in diameter is menu.

Cardiff coal fulfilling the above conditions has recently been sold here, duty paid by the sellers, delivered on cars alongside, for 21.40 francs ($4.13) the ton of 2,205 pounds.

The uses of bituminous coal in France should also serve as a guide to the American exporter. For domestic purposes, the coal should not be too friable, as the necessary handling produces much dust and consequent loss; neither should it be too bituminous, on account of the smell and smoke.

For the manufacture of gas, the requirements are practically the same as in the United States, except, perhaps, that more stress is laid on the necessity for a large amount of coke. Large quantities of coal are consumed in factories in this part of France. Two important consumers say that under existing conditions American coal is worth about 10 per cent less than the best Cardiff. How far this deficiency in value may be due to grates adapted to burning a coal with a greater per cent of carbon and of a slower combustion than the American coal tried here is a question which it may pay our exporters to investigate.

In the ships that visit ports south of Havre, there seems to be very little difficulty in obtaining good results from our coal. This may be due in part to the construction of the furnaces and in part to the experience of the stokers in using various kinds of coal.

The railways are the most important consumers. The three lines nearest La Rochelle burn nearly 700,000 tons per year. This immediate district receives 650,000 tons annually, of which 225,000 tons are burned on the railroads. I am led to believe that this proportion also holds for the ports of St. Nazaire and Nantes.

To meet the requirements of the French trade, the following suggestions are made: Can Americans (1) procure cheaper transport? (2) should they not sift certain coals? (3) should they not improve the loading apparatus, so that the coal be not broken in putting it into the hold? (4) should they not use their coal dust to make briquettes, which sell here for from 27 to 32 francs ($5.21 to $6.17) per ton?

GEORGE H. JACKSON,
Consul.

LA ROCHELLE, *June 3, 1902.*

AMERICAN LUMBER IN ROTTERDAM.

The wood exported from the United States to the Netherlands consists principally of pitch pine, timber, and lumber; also hard-wood logs, such as walnut, poplar, oak, hickory, and ash.

Poplar logs are continually in good demand, and fresh, sound logs of 28 inches and upward always find buyers upon arrival. The price obtainable at present is $44 to $46, and for logs of 22 inches and upward $38 to $40. Quotations for logs are per 1,000 feet Scribner, and for lumber per 1,000 square feet, ex quay.

Black-walnut logs are, after poplar logs, the American hard wood most used here. The market for this kind of logs is strong and in good condition, and stocks are exhausted. Prices vary from $80 to $120, according to quality and size. The best-selling logs are 18 inches and upward to average 22 to 24 inches, good, sound quality. Veneer logs are not wanted.

White-oak logs, 24 inches and upward, will realize $45 to $47. Hickory logs are in fair demand, and prime logs 14 inches and up will bring about $60 at present. Stocks are all cleared.

Persimmons seem to have gone entirely out of demand; the stock is about 80 tons.

White-ash logs, 16 inches and upward, sell for $44 to $45; gum logs, 24 inches and upward, about $38 to $40; the demand is limited.

The present quotations for lumber are: White oak, plain sawed, first and second grade, 1 inch to 4 inches, $45 to $52; white-oak strips, 1 by 4 to 6 inches, $38 (the demand is very limited); oak scantlings, 2½ by 2½ to 4 by 4 inches, 6 to 16 feet, $45; satin walnut (in good demand), 1 inch, $42; 1¼ to 1½ inches, $43 to $44; 1¾ to 3 inches, $45 to $46.

For black-walnut lumber, there are few buyers; quotations are, for 1 to 4 inches, $105 to $125.

Cottonwood is in active demand; quotations are: One inch, $28; 1¼ to 1½ inches, $29 to $30; 2 inches, $31.

Ash lumber, 1 to 3 inches, sells for $42 to $48; whitewood lumber, 1 to 3 inches, $42 to $50.

Pitch pine always sells readily in any quantity; prices at present obtainable are £13 10s. ($65.69) to £14 ($68.13) per standard.

Floorings, 1 by 6 inches, sell for £12 10s. ($60.79).

The above quotations are the average prices at this date, obtained from various dealers in logs and lumber at Rotterdam. It should be observed, however, that it is a somewhat difficult matter to name ruling prices, as much depends on stocks on hand, arrivals, and demands at a given time. Consuls are sometimes blamed for sending too flattering reports, when the fact is that at the time reports are made the stocks on hand are low and prices correspondingly high. By the time American shippers get their wares into the European markets, it is possible that large supplies may have arrived, and that prices are correspondingly lower.

S. LISTOE,
Consul.

ROTTERDAM, *June 9, 1902.*

AMERICAN LUMBER IN AIX LA CHAPELLE.

The following has been received from Consul F. M. Brundage, of Aix la Chapelle, under date of June 24, 1902:

I find that a considerable quantity of American lumber is used in Aix la Chapelle and vicinity, and that it is supplied by dealers in Antwerp, Düsseldorf, and Cologne. I have received a number of requests from purchasers here for direct communication with exporters, as it is desired to avoid middlemen's profits. I give below a statement of the kinds of lumber used, with present market prices. Several persons have consulted me with regard to establishing a yard or agency in this city, and I would suggest correspondence with Wilhelm Liessen, Südstrasse 7, Aachen, Germany.

BUILDING LUMBER.

Oak; thickness, 1, 1½, 1¾, 2, 2½, or 3 inches; length, 10 to 16 feet.
Poplar or cottonwood; thickness, 1½ or 2 inches; length, 10 to 16 feet.
White pine; thickness, 1½ or 2 inches; length, 10 to 16 feet.
North Carolina pine; thickness, 1, 1½, 1¾, 2, or 3 inches; length, 10 to 16 feet.
Pitch pine; thickness, 1, 1½, 1¾, 2, or 3 inches; length, 10 to 16 feet.

Prices.

Oak, $22.61 to $28.56 per cubic yard.
Cottonwood, $15.47 per cubic yard.
North Carolina pine, 55 cents per cubic foot.
Pitch pine, 46 cents per cubic foot.

FURNITURE WOODS.

White oak; thickness, 1¼, 1½, 2, 2½, or 3 inches; length, 12 to 16 feet.
Walnut; width, 6 to 20 inches.

Prices.

Oak, $26.18 to $34.51 per cubic yard.
Walnut, $47.60 per cubic yard.

GERMAN MEAT IMPORTS UNDER THE NEW INSPECTION SYSTEM.

The code of regulations for carrying into effect from the 1st of October next the now famous meat-inspection law of June 3, 1900, has been issued in the form of a special supplement to the regular periodical publications of the imperial health office. As such, it makes a pamphlet of 24 closely printed quarto pages, in which the whole system is set forth with the elaborate thoroughness and minuteness of detail characteristic of German legislation and administration. In transmitting for the information of the Department of Agriculture the full text of this measure,* which will influence so directly the importation of meats and meat-producing animals into Germany, the following synopsis of its provisions is submitted as of presumable public interest:

The first section of the present publication comprises the full text of the statute itself, which after several years of agitation and discussion was finally enacted and received the imperial signature on June 3, 1900. Then follows the decree of June 30, 1900, putting into effect from the 1st of October that year the twelfth section of the law, which forbids the importation of canned meats, sausages, and other forms of finely cut meats. This part of the statute, being a direct and simple prohibition, could be enforced at once, whereas the remainder of the law—which provides for a most elaborate and far-reaching system of inspection of animals and meats and official supervision of cattle, sheep, and hog markets, slaughterhouses, and the whole process of preparing and preserving meats—had to remain in abeyance until the necessary buildings could be erected, trained inspectors provided, and the other requisite machinery completed and put into working order. This has now been done, and the regulations just published announce the practical working methods of the new system. It is divided into chapters, as follows:

Chapter A includes 48 sections, many of which have several subsidiary paragraphs, and the whole occupies 11 pages of the published code. It prescribes with microscopic minuteness the system of inspection and treatment by the sanitary police of animals, slaughterhouses, and meats throughout the Empire. It covers in effect the whole domestic production of meats in Germany, and is throughout as precise and exacting as scientific sanitary erudition can make it. It is this portion of the new system which has evoked thus far the principal opposition in this country. The advocates of the statute assert that it is merely the application of modern sanitary science to the preparation of an important class of food products; that it embodies and provides for the protection which the National Government owes to the lives and health of the people. Opponents of the new system—among whom may be reckoned most butchers, provision dealers, market men, and in general the nonagricultural classes whose interests make them advocates of cheap and plentiful food—denounce these regulations as the outgrowth of scientific fanaticism, a phase of technical pedantry which has no proper place in the economics of everyday life. That it will increase the cost and difficulties of utilizing the already inadequate supply of home-grown meats is obvious; whether the additional security as to quality will offset these disadvantages, experience can only determine.

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*Sent to the Department of Agriculture.

Chapter B lays down regulations for the examination and qualification of inspectors, who must be competent veterinary surgeons; Chapter C covers the code of instructions for subinspectors who are not educated as veterinaries; Chapter D prescribes the regulations for inspection and sanitary treatment of foreign meats presented for import; and Chapter E comprises the whole topic of trichinæ and the treatment of pork meats, native or of foreign origin.

Although the principal features of the law have long been made familiar through consular and press reports, a brief résumé of some of its more important provisions, especially those which will affect importations of meats and animals, may be of present interest. Under paragraph 12, fresh meats can only be imported in whole carcasses. Carcasses of cattle and hogs, but not of calves, may be split in half, but the halves are to be left together and accompanied in all cases by the head, lungs, heart, and kidneys. Cow beef must have the udder attached and carcasses of pork must include the tongue. Excepting hams, bacon, and intestines, no piece of pickled, smoked, or otherwise preserved meat weighing less than 4 kilograms (8.8 pounds avoirdupois) may be imported into Germany.

When to all this is added the prohibition, under paragraph 21 of the law, of meats preserved with borax or boracic acid, or with any of several other antiseptic salts which have hitherto been more or less extensively used as meat preservatives, it will be evident that the net effect of the new system will be to more or less diminish the supply and increase the cost of meats for consumption in this country. Already, some premonitory symptoms of such influence are noticed. The Berliner Tageblatt of to-day makes the following comment:

> The meat-inspection law throws its shadow before—a meat famine is in sight. Old stocks of preserved meats have become exhausted, and since the countries which formerly supplied Germany with meats have for the most part found other

markets, and our import of cattle and fresh meats is steadily diminishing, Hamburg and Berlin have this week enjoyed a foretaste of what will happen when the meat-inspection law shall have entered into full force. It occurred at Hamburg on Saturday, June 14, that many butchers had no beef to sell because Denmark had sent very few cattle, and because the rest of Germany and Austria had furnished only a meager supply for part of the week. Berlin had to pay on Saturday at the cattle market, for the few available animals that were to be had, actual famine prices.

The Hamburger Correspondent of June 10, in announcing the issue of the regulations which form the subject of this report, said:

> It can not be doubted that vexatious delays and expenses, which the prescribed inspections will necessarily entail, will lead to an important diminution of meat imports as soon as the new regulations shall be enforced. In order to estimate correctly the effects of the law and the administrative regulations adopted by the Bundesrath, it is only necessary to inquire how our imports will be influenced thereby. The importations of mild-cured meats, including bacon, hams, canned meats, and sausages, during the past four years have been valued as follows:

Year.	Value.	
	Marks.	
1898	46,100,000	$10,971,800
1899	36,800,000	8,758,400
1900	25,400,000	6,045,200
1901	18,800,000	4,474,400

> This decline in the import of preserved meats has been caused partially by the prohibition of imports of canned meats and sausages. While our imports of fresh meats have come mainly from Austria-Hungary, Holland, Denmark, and Russia, at least 70 to 80 per cent of our foreign supply of preserved meats came from the United States. These will in future be most directly affected by the continued prohibition against sausages, canned meats, meats preserved with borax, and pickled meats in pieces of less than 4 kilograms (8.8 pounds) weight.

When it is remembered that cattle and most meats are exceptionally scarce and costly in the United States, and that other countries are ready to absorb most of whatever surplus our packers may have for export, it may be expected that the hitherto flourishing and important meat-export trade of our country with Germany will show during the coming fiscal year a serious and general decline.

FRANK H. MASON,
Consul-General.

BERLIN, *June 18, 1902.*

GERMAN AGRICULTURAL EXPOSITION.

The sixteenth annual exposition of the German Agricultural Society has just closed at Mannheim. As at previous exhibitions given by the society in other parts of Germany, live stock and agricultural implements formed the chief exhibits.

In machinery and farming implements, the displays were for the most part excellent and embraced a wide variety. Every leading manufacturer of harvesting machinery in the United States was represented, with from ten to twenty machines. A Toronto company had a large and well-selected exhibit. Two or three English manufacturers and the same number of German firms had displays. Many of the machines were kept in motion. In this class, the American exhibits were far in the lead and attracted much attention. The same was true of hayrakes, tedders, cultivators, and other lighter implements.

Many thrashers and portable engines were exhibited, all of German make, except a small French separator with a gasoline motor. The thrashers meet the requirement of the German farmer that the straw shall be broken as little as possible, which practically excludes the ordinary type of American thrasher.

As far as noted, but one exhibit of American plows was made. This would seem to show a want of interest on the part of our plow manufacturers. The explanation is to be found mainly in the persistency with which the German farmer clings to a type of plow which is not used in the United States. It is heavy, poorly shaped, and has a pair of wheels from 16 to 18 inches in diameter supporting the front end of the beam. The native plows exhibited were all of this pattern. It would seem that an easy-running American plow, a trifle heavier than the ordinary one-horse apparatus, and fitted, if possible, with a point that could be dressed by a blacksmith, should become popular in the mellow soil so common in many parts of the Empire. The local agent would have to be thoroughly competent to teach the use of the American plow, and it should be sold cheaper than the cumbersome native implement (because simpler in construction) and should prove far more satisfactory.

Other German farm machinery seems heavy and clumsy compared with the American. Parts on which there is little or no strain are made unnecessarily strong. This tendency appears in hayrakes, grain drills, mowers, tedders, shovel plows, weeders, harrows, etc., and reflects the German idea that an implement should not only do the work, but give evidence of lasting qualities. In the United States, the man who pays for the harvester or mower is likely to be the man who drives it or sees that it is driven properly and kept in good condition. In Germany, especially on the larger farms, the machine is sure to go into the hands of a hired man, who may be exceedingly careless in its use. Prizes were awarded at this exposition to machinery which would under no circumstances be used by an American farmer, because of the heavy draft upon his team.

In farm wagons, also, the exhibits displayed the prejudice in favor of heavy, cumbersome implements. It would seem that with the excellent public roads in Germany, the American farm wagon, if made of good material and well ironed and supplied with a 3-inch tire, should become popular. Undoubtedly, the wood used by the German wagon maker is much inferior to that employed in the United States and accounts to a degree for the larger size of the parts. The brakes on most of the wagons operate by a crank at the rear end, attached to the coupling pole.

Taken as a whole, the exposition showed the awakening interest in better farming appliances in Germany. In many parts of the grounds were improved pumps and spraying apparatus, milk cans and churns, apparatus for cooking feed for stock by steam, improved scales for various purposes, etc. Many of these appliances are constructed along distinctly modern lines and clearly indicate the trend of German manufacture in this important field.

H. W. HARRIS,
Consul.

MANNHEIM, *June 11, 1902.*

GROWING CROPS IN GERMANY.

The latest official reports giving the condition of the growing crops throughout Germany down to the middle of June have just been collated and published and fully confirm the favorable outlook that had been reported at the middle of May. The following table shows at a glance the reported condition of the principal crops on the 15th of May, the general improvement made from that date to the 15th of June, and the status of middle June, 1902, compared with that of the corresponding date last year, it being remembered that in German crop notation 1 indicates a full maximum yield, 2 good, 3 medium, 4 meager, and 5 practical failure, so that the lower the figure and decimal the better the indicated condition of the crop:

Description.	June 15, 1901.	May 15, 1902.	June 15, 1902.
Winter wheat	3.7	2.5	2.2
Spring wheat	2.8	2.7	2.4
Winter rye	3.1	2.8	2.4
Spring rye	3	3	2.4
Barley	2.7	2.9	2.4
Oats	2.6	2.9	2.4
Potatoes	2.5	2.9	2.7
Clover	3.5	2.9	2.4
Lucern	3.1	2.9	2.6
Meadow grass	3	3.2	2.5

There is thus indicated not only a general and satisfactory improvement along the whole line during the past month, but, with the sole exception of potatoes, every crop shows a markedly better condition than in June of last year. The cold, late, wet spring has been followed by a warm, moist summer, and, as was predicted, has wrought no injury to anything but early vegetables and fruits. The fact is again proven that a late spring is in Germany more favorable for the all-round interests of agriculture than—what is frequently experienced—a prematurely and abnormally warm March and April, followed by cold, wet weeks and the risk of frosts in May and June. The figures above quoted show a general condition above the mean average of the past ten years, the only note of complaint anywhere noticeable being of the increasing encroachments of certain weeds—gill flowers, wild mustard, and poppies—in the barley and oat fields. All conditions, therefore, continue to point to a full average harvest this year throughout Germany.

FRANK H. MASON,
Consul-General.

BERLIN, *June 30, 1902.*

BEET LEAVES FOR FODDER.

As an indication of the direction in which progress is now being sought for and promoted among sugar-beet growers may be cited the proceedings of a recent meeting of the Verein der Deutschen Zucker Industrie, a national association of beet culturists and sugar manufacturers, wherein it was decided to offer a prize of 10,000 marks ($2,380) for the best process which can be devised for drying beet leaves and "heads"—*i. e.*, the top which is cut off when the sugar beet is trimmed preparatory to grinding. The desperate condition in which the beet-sugar industry will be left by abolition of export bounties compels anew every possible economy in the conservation and use of each element in the raw material. This use of the pulp, leaves, and waste molasses as food for cattle is a chapter of the general subject which has hitherto attracted comparatively little attention in the United States. Its importance in Germany, as well as the present technical status of the leaf-drying process in this country, will be indicated by the conditions of the tests which competitors for the prize must be prepared to meet. These, as officially announced on the 27th of June, are as follows:

(1) Leaves and heads dried by the competing apparatus or process shall not contain water in excess of 12 per cent.

(2) The prepared product must be of good form and condition, as free as possible from foreign substances and smell, and not scorched or burned.

(3) The loss of soluble nutritive elements in the dried leaves as compared with fresh leaves shall not exceed 15 per cent.

(4) The working cost of the process, including depreciation and wear and tear of plant, shall be in such relation to the fodder value of the product that it will be, when properly installed and managed, economically profitable.

The remaining specifications provide that the plant for working the process shall not be unsightly or prejudicial to the neighborhood in which it is located; that the competing plans, drawings, and descriptions must be filed before September 15, 1902, at the office of Privy Councilor Koenig, in Berlin, and the apparatus be ready for trial at a place to be designated by the commission during the period from October 15 to November 25 of the present year. The result of this competition in utilizing for winter fodder what has hitherto been in our country almost a wasted element of beet culture will be worthy of the careful attention of sugar-beet farmers in the United States.

FRANK H. MASON,
Consul-General.

BERLIN, *June 30, 1902.*

CHAIN BOATS ON THE RIVER ELBE.

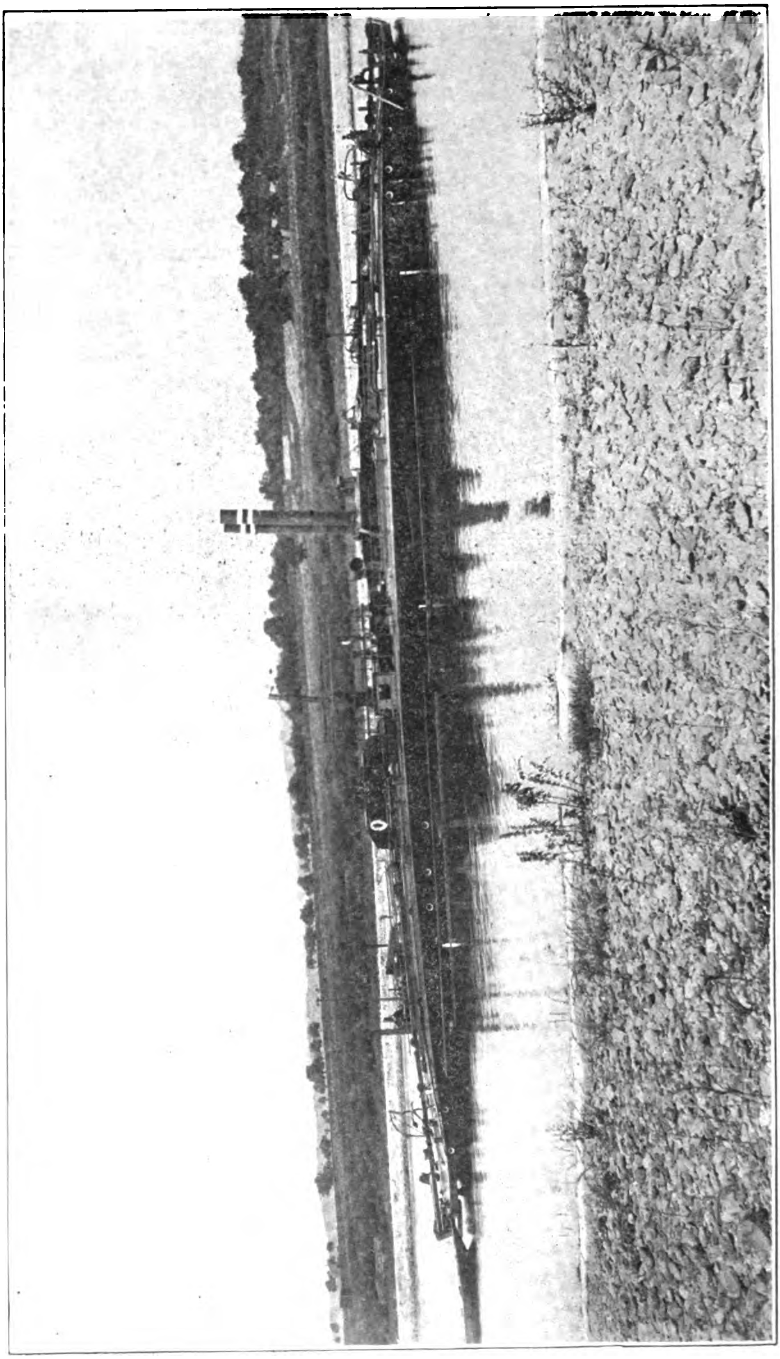
The use of a chain for propelling steamers on the River Elbe was inaugurated in 1866, and has proved an economical and successful means of navigating the swift current of that river. Much of the region traversed by the river is skirted by mountains, and as the stream is narrow the current is necessarily rapid and strong. The first experiment was made for the purpose of towing barges under the bridges with numerous piers at Magdeburg. Now, a chain lies in the channel of the river from Melnick, a point in Bohemia, to Magdeburg, a distance of some 290 miles. At one time, the chain extended to Hamburg, but as the country is flat and the current of the river sluggish below Magdeburg, its use between that city and Hamburg was abandoned in 1898.

The system is controlled by two companies—the Chain Elbe Navigation Company, whose authority extends from Magdeburg to the Bohemian boundary, and the Austrian Northwest Steam Navigation Company, in Bohemia.

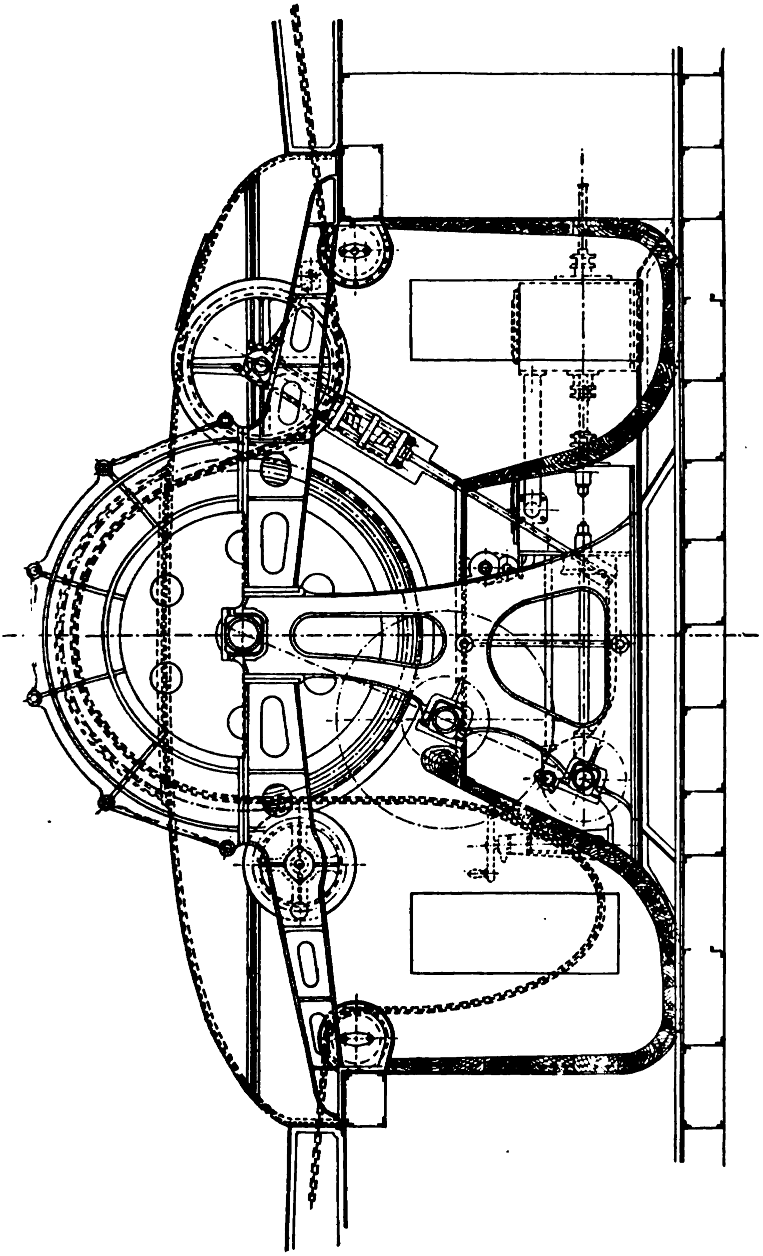
These companies own and operate 34 steamers, a few of which are provided with propellers, but most have no means of locomotion except the chain, which they use going up or down stream. The dimensions are: Length over deck, 38.3 to 55.67 meters (105.9 to 182.5 feet); width amidship, 6.7 to 8.2 meters (21.9 to 26.8 feet); draft without fuel, 0.6 to 0.88 meter (1.9 to 2.8 feet); number of boilers, 1 to 2; heating surface, 82 to 90 square meters (882.6 to 968.7 square feet); efficiency of engines, 100 to 200 indicated horsepower.

The boats are of symmetrical structure, and by reversing the engines move up or down stream without turning. They are provided with rudders at either end, operated independently by a pilot wheel located in the center of the boat.

The course of the steamer is not seriously influenced by the chain, and it usually obeys the helm as if it were free. The hull



CHAIN BOAT ON THE ELBE.



CHAIN-HOLDING APPARATUS.

and sides are made of iron, and to meet the rise and fall of the chain the deck slopes on an incline of about a yard from the center toward each end.

The vessels are provided at each end with deliverers or outriggers, which swing in a semicircle around a pivot by means of rollers on rails, and serve to take up the chain out of the water at the bow of the boat and drop it at the stern. The chain runs over the forward outrigger and over several roller disks until it reaches a steam drum (or drums) located in the center of the boat, which it encircles three times. It is then carried aft over another set of rollers until it drops into the water.

By means of an interposed interchangeable gear, the velocity of rotation is altered according to the course of the vessel up or down stream.

Each of the chain drums consists of four pulleys arranged flush side by side and stiffened by steel bandages between which forged iron ribs are arranged. Within the grooves thus obtained, measuring 100 to 108 millimeters (3.9 to 4.2 inches) in width and about 80 millimeters (3.1 inches) in depth, runs the chain, obtaining sufficient friction for operation. The driving machinery in the older types of boats consisted generally of twin machines with injector condensation; but the newer vessels are fitted with four-cylinder compound engines with injector or surface condensation. The steam pressure varies between 4 and 10 atmospheres. The boilers contain one or two flame tubes and are provided with return heating tubes.

The original construction of drum has been replaced in a large number of steamers by the chain-gripping wheel (patent Ewald Bellingrath). This wheel consists of only one driving drum. The chain which, as above stated, wound three times around the drum in order to insure sufficient friction, in this case runs over only about one-half of a drum. It is guided over the ship in the same manner as explained.

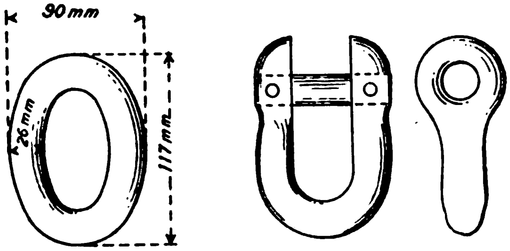
On either side of the flanges are provided fingers, four or five of which form a hand. These fingers are provided with springs, which cause the fingers to press against the individual links of the chain. The fingers are also journaled in hands which are guided by means of rollers in such a manner that in ascending the fingers engage the chain links and prevent slipping of the chain. At the point where the chain leaves the drum, the hands and fingers are pushed aside by a guide frame, thereby freeing the chain.

Many of the newer type of vessels are provided with two turbine propellers of the Zeuner system, or ordinary propellers, which enable the vessel to run down stream independent of the chain.

Auxiliary engines for slackening or tightening the tug ropes, handling the anchor, and operating the funnel winches are provided.

The present length of the chain lying in the River Elbe is 110 kilometers (68 miles) from Melnick to Schmilka (Bohemian border), and 351 kilometers (218 miles) from Schmilka to Rogatz (near Magdeburg).

As to the dimensions of the chain, the diameter of the link shanks is 27 to 29 millimeters (1.06 to 1.14 inches); the length of link, 117 millimeters (4.6 inches); and the width, 90 millimeters (3.5 inches). The chain is delivered in pieces measuring from 500 to 1,000 meters (545 to 1,090 yards), and these are connected by means of so-called "lock links," as shown in the accompanying sketch.



Each boat carries a number of these locks on board, which are also used to repair the chain in case of breakage.

As there is only one chain for the up and down travel, the vessels have to leave the chain when passing each other. In such a case, the steamer going down stream stops, locates a lock link, and opens it at the downstream end. To either end of the thus parted chain, ropes are fastened and the vessel slowly moves down stream until the rope fastened to the upstream end of the chain reaches the drum. Then the rope is removed and an auxiliary chain put in its place, which is wound upon the drum—the vessel still proceeding down stream—until the chain reaches the outrigger at the bow. At the same time, the downstream end of the chain has been dropped by means of the attached rope into the water, and consequently will be found near the stern outrigger, where it is taken up and connected again with the forward-chain end, after the auxiliary chain has been removed by replacing the lock link. Before the reconnected chain is dropped again into the water, the steamer anchors itself by means of a small auxiliary chain to the main chain, to prevent its drifting down the river. A signal is now given to the upstream vessel, informing it that everything is ready, and it advances until both vessels are side by side. Both vessels are now tied together, and the down vessel is taken up stream a short distance in order to free the auxiliary chain from the main chain. The upstream vessel slowly proceeds until the lock link reaches the stern outrigger, where it is opened, the downstream end is picked up, and a thin rope attached to it. It is now taken over to the rear outrigger of the down vessel and there secured by means of a catch. This steamer now is allowed to drift until its forward outrigger comes alongside the stern outrigger of the upgoing vessel. The auxiliary chain of the down boat is now taken in through the rear outrigger of the up vessel, and is connected again to the front end of the main chain. The down vessel drifts the length of the loose chain that has accumulated in the rear chain box of the upstream boat, and the latter can now proceed, the downstream vessel following until at first the auxiliary chain and then the main chain have run over the drum. The auxiliary chain is now disconnected and the end of the main chain is drawn by means of the rope through the rear-chain groove up to the rear outrigger and there connected by the lock link to the other main-chain end.

The two steamers have now passed each other, and, both being on the main chain, can continue on their way. The whole operation takes between fifteen and thirty minutes.

In case of breakage of chain, quick stopping is called for, which is accomplished by setting the machinery at rest and by securing an anchorage. If the chain breaks on board, the repair is. quickly effected by putting in a lock link, of which a supply is kept on the vessel. If, however, the break occurs in the water, the lost end has to be grappled for. If the vessel is provided with propellers or turbines, a grappling anchor is used, which is dragged over the bottom of the river, the vessel operating sideways. If, on the other hand, the vessel is not self-propelling, a small rowboat which accompanies each steamer is manned, and from it grappling anchors are dragged. When the end is raised, it is drawn onto the steamer and connected with the other chain end. Under favorable circumstances, a rupture can be remedied in about fifteen to twenty minutes.

The speed up stream on the chain averages 4 to 5 kilometers (2.5 to 3.1 miles) per hour and down stream 10 to 12 kilometers (6.2 to 7.5 miles) per hour. The consumption of coal (brown soft coal from Bohemia) on the older type vessel averages 3.5 kilograms (7.7 pounds) per indicated horsepower per hour, but a compound machine reduces this amount to 2 to 2.5 kilograms (4.4 to 5.5 pounds).

By the use of the chain, a steamer can tow four to six barges, containing 1,200 to 1,500 tons, at a speed not attainable by powerful side-wheel towboats, with about one-third the power and a corresponding saving in fuel.

The cargoes down stream consist of building stone, lumber, coal, and merchandise; up stream, of grain, flour, petroleum, anthracite coal, and merchandise.

CHAS. L. COLE,
Consul-General.

DRESDEN, *May 20, 1902.*

GERMAN CEMENT INDUSTRY.

The efforts of the German Cement Syndicate to control the production and to regulate the prices of cement have failed, and the syndicate has been dissolved.

In the last two or three years, so many new factories have sprung up that it was impossible for the syndicate to bring them all under one management and the competition which has ensued has been disastrous to the trust. At the same time, dissensions have arisen within the syndicate. While there was little demand for the brands of the new factories which had been taken into the trust, some of the old factories were overcrowded with orders. Complaints arose as to the apportionment of sales, some works declaring that they did not receive the number to which, on account of their productive capacity, they were entitled.

While in 1898 the dividends of the leading factories varied between 8 and 33 per cent, many now return nothing on the capital invested in them, others are issuing preferred stock to create new working capital, a number have stopped work, and one has gone into bankruptcy. The struggle, which has lasted since September, 1900, has culminated in a conflict of extermination between the larger factories and the smaller. Prices of cement have fallen so that they are now at least 20 per cent below the cost of production of the most capably managed works.

One factory reports that lime costs 120 marks (about $30) per car, while the cement upon large orders is offered at 130 marks (about $32.50) per car.

Another factory reports that Portland cement is offered at 125 marks ($29.75) per 10,000 kilograms (22,046 pounds) at the place of manufacture, while the cost of production for the same quantity varies from 180 to 190 marks ($42.84 to $45.22). These price reductions can have but one result: only those factories which have large capital reserves and can produce at the least cost will be able to sustain themselves.

The domestic consumption and export in Germany amount to about 14,000,000 barrels, and the productive capacity of the factories is 30,000,000 barrels, or more than twice as much; consequently, the factories can only work at half their capacity, and the supply of cement on hand is so great that it has to be stored.

The distribution of the factories in Germany and the growth of the industry since 1899 are interesting. In South Germany, there existed 20 Portland-cement factories in that year and 25 in 1901. In this interval, the capacity of production increased from 5,000,000 barrels to about 8,500,000 barrels. In middle Germany, there were in 1899 about 28 factories, with a capacity of 6,100,000 barrels; in 1901, these had increased to 39, with a production of 13,000,000 barrels. In Schlesien, there were in 1899 six factories, with a capacity of 1,500,000 barrels; in 1901 there were 7, with a production of 2,000,000 barrels. North Germany had in 1899 fourteen factories, with a capacity of 4,000,000 barrels; these works in 1901 showed a production of 4,700,000 barrels. There are, besides, 11 large slack-cement factories in Germany, with a total production of 800,000 barrels.

The competition between these different factories and the continued reduction in prices must inevitably result in the destruction of some of them. The labor market shows the effect of this struggle for existence. From 1895 to 1900, according to reliable estimates, the number of workmen employed in the factories increased from 30,000 to 35,000. During the past year, the number employed has receded below the last-mentioned figure, although in the meantime the number of factories has increased. One of the greatest complaints of the workmen is that the number of hands employed in each factory is constantly changing, so that the work is not steady, and no one knows when he will be discharged. Wages have fallen 25 per cent since 1899.

The decrease in building throughout Germany has also affected the industry, and the sales of cement in Berlin during the past year are said to have been one-fourth less.

In order to stem further depression in prices, a meeting of the Northwest and Middle German Portland Cement Syndicate was held in Hanover on July 1, 1902. Thirty factories were represented by thirty-seven delegates. The object of the meeting was the creation of a price convention, which should go into operation on January 1, 1903. The meeting was of the unanimous opinion that no anticipatory sales should be made for the year 1903.

TALBOT J. ALBERT,
BRUNSWICK, *July 8, 1902.* *Consul.*

ECONOMIC CONDITIONS IN GERMANY.

The Department has received, under date of July 1, 1902, a review by Mr. F. P. Dodge, secretary of the embassy at Berlin, of recent statistics issued by the German Government. He says, in part:

Population.—In 1900, there were 757,000 strangers living in the Empire, of whom 390,000 were Austro-Hungarians, 88,000 Dutch, 69,000 Italians, 55,000 Swiss, 46,000 Russians, and nearly 18,000 Americans. The total population was 55,587,000. The total German emigration during 1901 was 22,073 (in 1900, 22,309), of whom 7,300 went via Hamburg and 9,100 via Bremen.

Labor.—There were 1,071 strikes during 1901, involving 141,220 persons, as against 1,462 strikes of 298,819 persons in 1900. In 200 cases in 1901 the strikes were successful, in 285 cases they were partially successful, and in 571 cases they failed.

Mining.—The production of anthracite coal in 1900 was 109,000,000 tons, as against 101,000,000 tons in 1899; the production of lignite coal was 40,000,000 tons in 1900 and 34,000,000 tons in 1899; raw iron, 8,500,000 tons in 1900 and 8,100,000 tons in 1899; copper, 35,000 tons in 1900 and 34,000 tons in 1899.

Beer and spirits.—The production of beer was 44,000,000 hectoliters (1,161,600,000 gallons) in 1900 and 43,000,000 hectoliters (1,135,200,000 gallons) in 1899; of distilled liquors, 4,050,000 hectoliters (106,920,000 gallons) in 1900 and 3,600,000 hectoliters (95,040,000 gallons) in 1899.

Commerce.—The imports of raw material for manufactures in 1901 amounted to $586,004,000 and the exports of the same to $258,468,000, as against $667,114,000 and $264,418,000, respectively, in 1900; the imports of manufactured products amounted to $253,232,000 and the exports to $688,296,000, as against $285,362,000 and $709,716,000, respectively, in 1900; the imports of grain and other food materials amounted to $451,724,000 and the exports to $107,576,000, as against $419,356,000 and $123,046,000, respectively, in 1900. The trade was distributed by countries as follows:

From and to—	Imports.		Exports.	
	1901.	1900.	1901.	1900.
United States	$247,996,000	$242,760,000	$91,630,000	$104,482,000
Russia	170,408,000	170,408,000	75,684,000	77,112,000
Austria-Hungary	164,696,000	172,312,000	116,858,000	121,380,000
Great Britain	156,366,000	199,920,000	218,008,000	217,056,000
Holland	....	....	90,202,000	94,010,000

Colonies.—The budget for the German colonies amounted in 1902 to $8,901,200; in 1901, to $7,949,200. The total trade with the colonies in 1900 was valued at $13,827,800; in 1899, at $12,709,200; and in 1898, at $11,067,000.

NEW GERMAN METHOD FOR MEASURING FABRICS.

Letters patent for a unique device for measuring the length of fabrics have recently been granted too Herr F. C. Stephan, of Crimmitschau, this consular district. The apparatus consists of a graduated paper band, or tape, which is automatically wound up with the cloth. A similar device has already been employed for measuring fabrics, but when used for very fine goods, such as silks, velvets, satins, etc., it was found that an impression was left by the strip, which often rendered delicate materials unsalable. This was mainly due to the fact that the tape was wound in superimposed layers. The new device obviates this difficulty by constantly changing the position of the measuring band.

Cuts and description of the apparatus are given below:

The apparatus *a* contains the roll of measuring band or strip *b* and permits its free withdrawal, while at the same time its outlet point is constantly altered, thus delivering the said measuring band or strip between the folded layers of the material or fabric *c* to be wound in a roll; the strip being first delivered at the farthest end from the front longitudinal edge *d* of the fabric. The fabric is then wound up together with the measuring strip, which during the operation is pulled out of the measuring band containing and delivering apparatus. The measuring strip, delivered from the apparatus, passes through an opening in a slide, which gradually moves forward and so constantly alters the position of the measuring

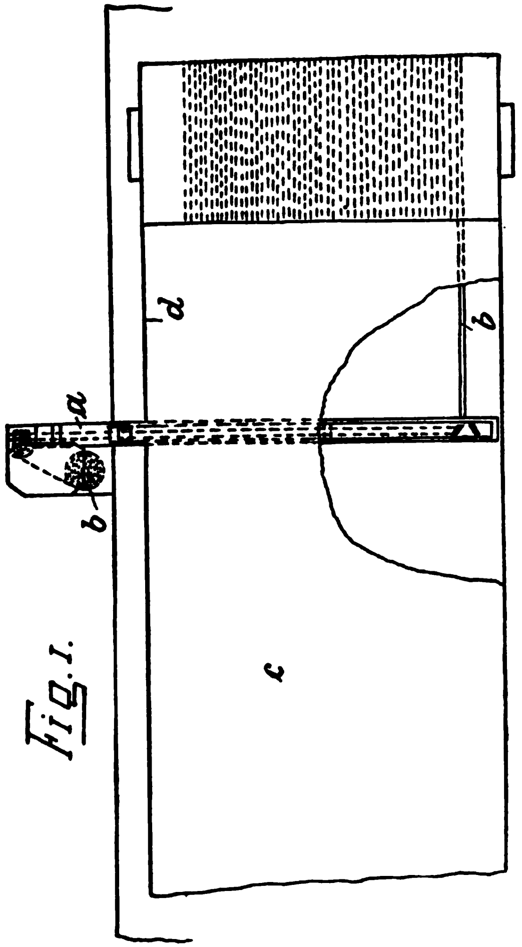


Fig. I.

Fig. II.

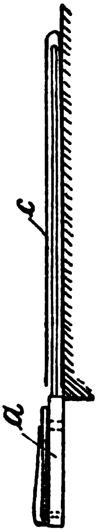
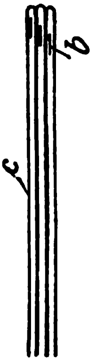


Fig. III.



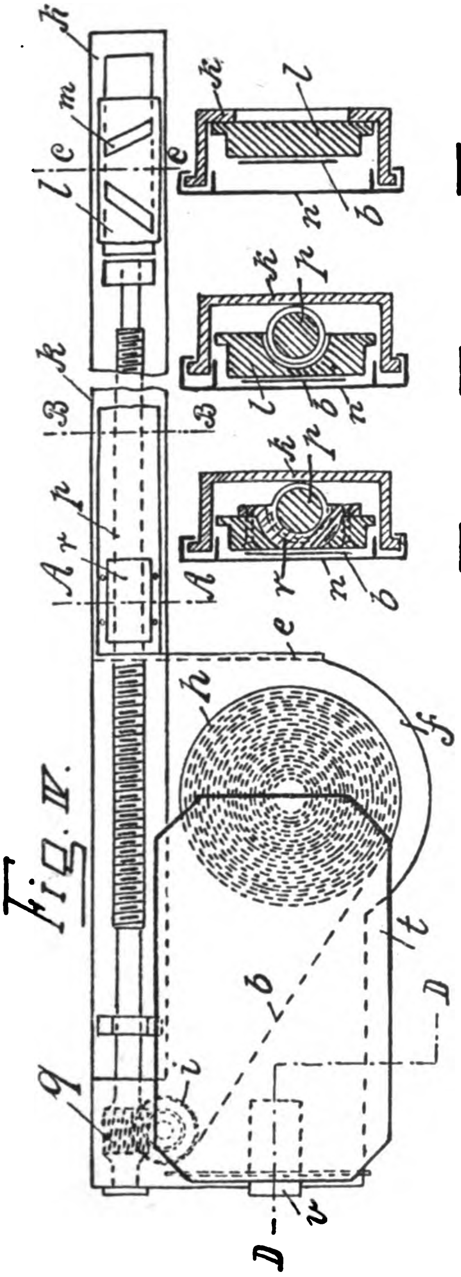


Fig. IV.

Fig. V.

Fig. VI.

Fig. VII.

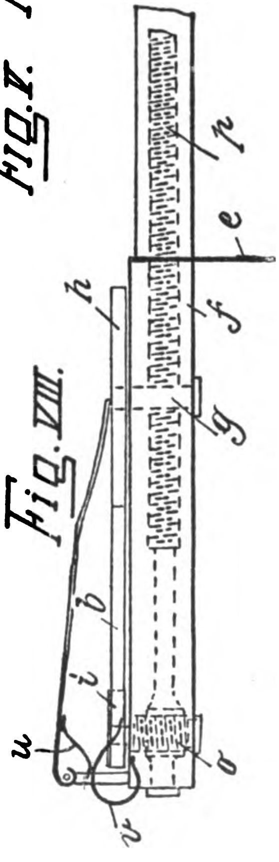


Fig. VIII.

band, which latter is thus spirally wound in the cloth roll. In this manner, no two convolutions of the measuring strip will be superposed and thus make an impression in the face of the fabric.

The measuring-band introducing apparatus is shown in elevation in Fig. IV, while Figs. V to VII are cross sections thereof taken respectively on lines *A* to *A*, *B* to *B*, and *C* to *C*. Fig. VIII is a side elevation of Fig. IV, taken in section on lines *D* to *D* through the cover *t*.

A box *f*, with plate *e* for securing the apparatus to the table top, is provided with a pin *g* for the reception of the measuring-band roll *h*. The measuring band *b* from the roll is led around a guide pulley *i* and then through a hollow delivery channel *k*. The latter is provided with a slide *l* having two slanting delivery slots *m* for right and left winding and is covered with a top plate *n*. The roller *i* is fast on a worm wheel *o* carried in bearings in the box *f* and gearing in a worm wheel *q* at the end of a spindle *p*. The spindle *p*, which is carried in bearings in box *f* and delivery channel *k*, is revolved, by unrolling the measuring strip, through the guide pulley *i* and worm gear *q*. The rotation of the spindle *p* operates a semi-screw nut *r* and thus moves the slide *l* endwise, the nut *r* being fixed to the slide *l* and engaging in the screw threads of the said spindle. In this manner, the slide with the delivery slot *m* moves gradually farther away from the measuring roll *h*. After the slide has reached the end of its path, it may be taken out and returned to its original position. A cover plate *t* is pressed by springs *uv* with its fore edge upon the measuring-band roll *h*, so as to produce a certain resistance to the unrolling of the measuring band or strip, which should be greater than the resistance of the rotation of the worm gear. The cover affords at the same time a protection against the falling out of the measuring-band roll *h*.

E. A. CREEVEY,
Consul.

GLAUCHAU, *June 2, 1902.*

TRADE OPPORTUNITIES IN FINLAND AND GERMANY.

The following letter, which has been received at the Berlin consulate from Bjorneberg, Finland, is respectfully commended to the attention of American shoe manufacturers who are seeking to extend their export trade to new markets:

BJORNEBERG, *June 28, 1902.*

To Consul-General MASON, *Berlin:*

I see from the technical paper Ledermarkt, of Frankfort-on-the-Main, that you are interested in the export of ready-made shoes from America, and I permit myself to ask for the address of two American shoe exporters or manufacturers.

American shoes are not yet imported into Finland, and, as I am interested in the matter, I would like to see what can be done with them.

Thanking you, Mr. Consul-General, in advance,

I am, very respectfully yours,
JACOB RAAD.

Two articles for which there is an active and reliable demand in Germany are sulphate of copper (blue vitriol) and flake graphite. Any American exporter having either or both of these materials at command can find a ready agent for Germany by applying to Oskar Pascheles, 24 Gänsemarkt, Hamburg.

FRANK H. MASON,
Consul-General.

BERLIN, *July 1, 1902.*

EXPOSITION OF SPORTS IN ST. PETERSBURG.

The International Exposition of Sports, now being held in this city,[*] is the first of its kind in Russia. It embraces automobiles, motors, bicycles, bicycle implements, and all articles referring to horse sport, hunting, aërial navigation, photography, and water sport.

The group attracting the most attention is the bicycle-sport section, where the two largest cyclists' leagues of Russia (one composed of 2,000 members) occupy the first place among the exhibitors. Among many interesting exhibits, I noticed a first-class automobile of 7½ horsepower, system "Peujot," of Paris; a motor cycle of 1½ horsepower, running 45 versts (about 30 miles) per hour, exhibited by the firm Minerva, of Belgium; a bicycle that can be propelled by hand or foot, invented by Dr. N. A. Nesmeianov, of Moscow; and American bicycles with spring frames, exhibited by a Chicago company, etc.

The best exhibit in the horse-sport section is a model of the stables of Emperor William II, exhibited by a Berlin house. A large number of different American vehicles—dogcarts, racers, light buggies, etc.—are shown by J. Reimer, of St. Petersburg.

In the water-sport section, a galvanized unsubmergible steel boat and an oar that can be taken to pieces attracted attention.

The exposition is well patronized.

W. R. HOLLOWAY,
Consul-General.

ST. PETERSBURG, *June 30, 1902.*

MANUFACTURE OF ELECTRO-STEEL IN SWEDEN.

Consul Robert S. S. Bergh, of Gothenburg, sends, June 11, 1902, the following translation from a recent issue of the Trading and Shipping Journal, of that city:

> At the meeting of the Iron Manufacturers' Association (Brukssocieteten) at Jernkontoret, Engineer F. A. Kjellin and Mr. Benedicks gave some very interesting information about the production of electro-steel at Gysinge.
>
> The problem of smelting steel by electricity has for a long time attracted the attention of inventors, and experiments have been made here. By the advice of Engineer Kjellin, Mr. Benedicks decided in 1899 to build at Gysinge an electric steel furnace without electrodes.

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[*] See ADVANCE SHEETS No. 1303 (March 31, 1902); CONSULAR REPORTS No. 260.

In the latter part of February, 1900, the first furnace was finished and ready for trial, and after a few experiments the first ingot was produced. The steel was found to be of excellent quality. The problem was thus solved technically, but not economically; for, with the dynamo of 78 kilowatts used, not more than 270 kilograms (575 pounds) of steel were obtained in twenty-four hours, and in the furnace there was not room for more than 80 kilograms (176 pounds). A larger furnace was seen to be necessary, and this was completed in November, 1900, and proved to be a great improvement. In the second furnace, which held 180 kilograms (397 pounds), from 600 to 700 kilograms (1,322 to 1,543 pounds) of steel were produced in twenty-four hours. The Gysinge sulphite factory burned down on August 11, 1901, and it was decided to build steel works in its place and to use the water power available there. For the steel furnace there was utilized a turbine of 300 horsepower, with direct-coupled generator. The new furnace is to hold 1,800 kilograms (3,970 pounds), and the production is estimated to be at least 1,500 tons a year if charged with cold raw material.

Engineer Kjellin said that the steel produced is of superior quality and characterized by strength, density, uniformity, toughness, and the ease with which it can be worked in cold, unhardened condition, even when containing a very high percentage of carbon. Compared with other steel, it also has less tendency to crack or warp when hardened.

The reason why this steel in certain qualities differs from other steel, especially in its softness when unhardened, is considered to be its freedom from gases. The manufacture of special steel, with nickel, chrome, manganese, or wolfram, will, of course, not meet with any difficulties. The chrome steel and wolfram steel produced at Gysinge has proved to be excellent for lathe tools. When used for permanent magnets, the Gysinge wolfram steel has been found to give stronger magnets than other wolfram steel and has not warped in the hardening.

From estimates made, it has been ascertained that the furnace used at Gysinge, which is simple in construction and easily managed, has prospects of competing, as to cost of operation, with the furnaces heretofore used for fusion of steel, especially as it yields steel of a better quality.

For this country, with its good ores and large supply of water power, the electric method of smelting steel ought to be of great importance, and abroad, where blast-furnace gas is becoming a cheap source of power, it ought to come into extensive use.

After the lecture, Engineer Wahlberg made some statements concerning tests of steel ingots from Gysinge, which had been found to be uniform and homogenous. Microscopic examinations had indicated that there was no difference between the electro-steel and crucible steel, which was so much more remarkable as the electro-steel in other respects had different qualities.

FOREIGN TRADE OF DENMARK IN 1901.

Consul J. C. Freeman, of Copenhagen, under date of June 17, 1902, transmits the following statement of the foreign trade of Denmark in 1901, published by the "Statistisk Bureau" in Copenhagen:

The value of goods imported for consumption in Denmark during 1901 amounted to 397,200,000 kroner ($106,449,600). The value of home-produced goods exported to foreign countries during the same period amounted to 292,000,000 kroner ($78,256,000).

The table below shows the imports and exports for the last four years:

Year.	Imports.	Exports.	Difference.
1901	$106,449,600	$78,256,000	$28,193,600
1900	111,541,600	75 549,200	35,992,400
1899	107 146,400	72 386,800	34,759,600
1898	98,436,400	63,918,000	34,518,400

The following is a list of the goods the import value of which was essentially less in 1901 than in 1900:

Description.	1901.	1900.
Maize, or indian corn	$5,968,000	$8,763,600
Bran	964,800	1,206,000
Seeds for sowing	1,313,200	1,581,200
Coffee	1,983,200	2,331,600
Sugar	1,661,600	1,849,200
Yarn:		
Woolen	1,340,000	1,608,000
Cotton	964,800	1,393,600
Textiles:		
Wool	4,127,200	4,502,400
Cotton	3,698,400	3,939,600
Leather goods	1,795,600	1,929,600
Petroleum	964,800	1,179,200
Coal and coke	8,683,200	11,229,200
Ships	1,045,200	1,608,000
Metals and manufactures of	8,763,600	10,773,600
Timber	4,475,600	5,145,600
Total	48,749,200	58,772,400

The decrease in imports shown in the above list arises principally from depreciation in prices. The greatest fall in amount of imports is shown by coal and coke, from $11,229,200 to $8,683,200. In reality, the import has increased in quantity, and, taking the prices of 1900 as a basis for calculation, the import of 1901 would amount to $10,934,400. The following table gives a list of goods the exports of which were essentially greater in 1901 than in 1900:

Description.	1901.	1900.
Pork and bacon	$16,240,800	$15,785,200
Butter	35,456,400	32,026,000
Eggs	5,708,400	4,850,800
Barley	1,340,000	1,184,200
Fish, fresh	1,688,400	1,184,200

ANTWERP GEOGRAPHICAL EXHIBITION.

The Cartographic, Ethnographic, and Maritime Exposition* was opened to the public on May 22. The Royal Geographical Society of Belgium has obtained for the purposes of this exhibition the assistance of the French, Dutch, Spanish, Italian, and Mexican Governments, and in addition the Queen has sent many interesting objects from her private collections.

The exhibition of ancient and modern charts, atlases, maps, globes, and projections is perhaps the most interesting that has ever been brought together, and is particularly notable for its fine specimens of the works of Mercator, Ortelius, Blaeu, Hondius, and the valuable display of those of Elisée Reclus, the great geographer of modern times.

The charts of the Ka-Tanga scientific expedition here find a place, as well as the various scientific apparatus used by the members of the mission. There is a fine map of the Lower Kongo and some remarkable relief maps of the Suez and Panama canals, the districts of Lake Geneva and the Matterhorn, as well as a large one of the surface of the moon.

The ethnographical section comprises photographs, weapons, household utensils, religious objects, articles of wearing apparel, etc., from the Kongo Museum at Terveuren, from missions in the Kongo, China, Java, and South America, besides a brilliant display of gods and goddesses from the Dutch East Indies and beautiful tapestries from the royal palace at Pekin.

In the maritime section are models of the newest types of ocean liners, furnished by the principal steam navigation lines; models of old Dutch craft and men-of-war, and of the proposed ports at Ghent, Brussels, and Heyst; souvenirs of the explorations of the Duke of Abruzzi, of the Belgian Antarctic expedition, etc.

A number of improved instruments for studying the depths of the sea, life-saving apparatus, and instruments of precision for exploring, prospecting, and surveying purposes, besides astronomical instruments, complete an exhibition that is highly interesting from both an educational and scientific point of view.

GEO. F. LINCOLN,
Consul-General.

ANTWERP, *June 9, 1902.*

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*See ADVANCE SHEETS No. 1194 (November 20, 1901); CONSULAR REPORTS No. 256 (January, 1902).

MECHANICAL STANDARDIZATION IN GREAT BRITAIN.

Consul Marshal Halstead, of Birmingham, under date of June 10, 1902, calls attention to the following editorial from the London Times of June 9, showing the progress being made in standardization in England:

The favorable reception given by Mr. Balfour to the deputation which lately waited upon him on the subject of engineering standards, as reported by us a day or two ago, and his announcement that both the War Office and the Admiralty were prepared heartily to cooperate with the efforts of the eminent committee which approached him on the subject are full of promise for some of those departments of British industry which of late years have been most seriously threatened by foreign competition. Few people have any adequate conception of the waste of money, of time, and of material which is consequent upon the employment of all manner of irregular shapes and sizes in various kinds of constructive work; and the evils hence arising—although attention was first called to them by an eminent Englishman more than sixty years ago—have been tolerated in this country with an indifference or supineness which has not been displayed elsewhere. It was in 1841 that the late Sir Joseph Whitworth pointed out the inconvenience constantly arising from the different patterns of screws then employed by different makers of machinery, with the result that a machine in some distant part of the world might be crippled for want of a single screw, and might remain so until sufficient time had been given to send to the workshop of the original maker for the supply of the deficiency. He proposed that manufacturers should agree upon a uniform size and pitch of thread for every diameter of screw or of aperture, and was promptly met by the contention that the form used in every workshop was, in some point or other, better than the rest. Firm A would not use the screws used by firm B, and firm C would have nothing to do with those of either. But the shrewd and patient north-country man was not easily discouraged. He evaded the difficulty by producing the exact mean of the several patterns used by the most eminent firms, and his proposal was adopted by acclamation. He had so far foreseen this result as to have quietly prepared machinery for dealing with it, and when the standard screws were accepted he was at once in a position to supply the tools necessary for cutting them. His attention was soon after diverted to other subjects, but he constantly regretted his inability to deal with other things as he had dealt with screws, and was never weary of expatiating upon the advantages which would accrue to British industry from the national adoption of a sufficient variety of standard sizes in all departments of manufacture. His favorite object lesson was furnished by a candle wabbling loosely in a candlestick, and only rendered firm by a band of paper, or by one requiring to be scraped before it could be fixed; and he would ask why candle makers should not agree as to the number of sizes required by consumers, and why every No. 1 British candle should not fit easily and correctly into every No. 1 British candlestick. The iron and timber parts of buildings, such as girders, doors, door frames, window sashes, and the like, moved him to wrath by their diversity; and he was accustomed to maintain that the convenience which would be afforded to purchasers by the general adoption of a proper number of English standards, and by accurate working to them, would be sufficient to give something like a monopoly of the trade in every branch of manufacture in which the principle was carried into effect.

Perhaps, the first important step toward action upon Whitworth's principles was taken some years ago by an association representing the principal railroads of America, which had for one of its objects the attainment of uniformity in the patterns of rails and in the parts of locomotives. This association set itself to determine, for example, how many patterns of locomotive were required for the various demands of traffic—for express engines, goods engines, shunting engines, and so forth—and how these might be made in the most economical and practical way. The result was, certain patterns having been adopted by all the companies included in the association, that manufacturers were able to work for stock at times when they had no orders in hand, and to do this without danger of finding themselves burdened with unsalable goods. An incidental consequence was, of course, comparative cheapness of manufacture, and that in a degree which speedily made itself felt when railways outside America were coming into the market as purchasers, and were content to deny themselves the luxury of engines which had been "specially designed" by their own officials. Mr. Balfour told the deputation not only that "the advantages of standardization were obvious," but also "that no human being could have a doubt as to the magnitude and the importance of the subject," and that, as far as he could offer an opinion, he entirely agreed with the views placed before him by the members of the deputation. These are strong expressions, and the majority of people will think them entirely justified by facts; but it is nevertheless true that these same views have been urged by a few persons for a great number of years, and that so far they do not appear to have met with a degree of acceptance at all commensurate either with their truth or with their importance. The case has too often been like that of the diversity of screws, but with no Whitworth to suggest the happy mean by which individual claims or pretensions could be reconciled. Every designer has been wishful to have "his own" pattern of some appliance in general, or perhaps universal, demand—a pattern a little thicker or a little thinner than that usually employed, and perhaps only representing a maximum of cost in combination with a minimum of advantage.

A variety of circumstances, however, have lately combined to force the question of standardization upon British engineers and mechanicians, foremost among them being the recent discussion as to the supply of locomotives to Indian railways and the enormous demand which has lately arisen for various kinds of electrical machinery. The merit of perceiving and of acting upon the favorable opportunity is largely attributable to Sir John Wolfe-Barry, whose plea for reform has been taken up by the Institution of Civil Engineers, with the cooperation of the Institution of Mechanical Engineers, the Institution of Naval Architects, and the Iron and Steel Institute, and has led to the formation of a very strong committee, comprising many of the most eminent names among the leading members of these bodies, with a recent addition of representatives from the Institution of Electrical Engineers. It follows that the movement is now being backed by all the leading technical societies of the country, and is being controlled by practical men who are in touch with the requirements of the engineering professions and trades. It may therefore be reasonably expected to be marked by a sufficient flexibility of adaptation to altered circumstances, so that the opposite errors of too great readiness to discard the old and of too great reluctance to adopt the new may both be effectually guarded against. It would be quite possible, of course, to erect an undue worship of standardization into a barrier against improvement, or against the adoption of modifications which the real needs of actual or potential customers might require; but any such danger appears to be much diminished by the lines on which the committee and its subcommittees have been constituted. It is a matter for great congratulation that the principal manufacturing or purchasing departments of the Government should be brought into touch with the movement, so that these departments when placing their contracts may recognize the standards laid down by the committees. There is much reason to believe that the War Office and the Admiralty have in past times done a good deal to hinder the progress of manufacture by an obstinate adherence to methods or to demands which might with advantage have been suffered to become obsolete, and which would have been greatly modified in dealing with any private consumer. The more completely the spending departments can be brought into touch with ordinary requirements the better it will be alike for the manufacturer and for the taxpayer; and the more hearty the cooperation of the Government with the movement which has elicited from Mr. Balfour expressions of cordial approval the more rapidly will the pessimists among us be relieved of the anxiety concerning foreign competition which they have lately had some ground both for feeling and for expressing. The British Empire has conducted a great war to a triumphant issue, and its sons must now gird themselves for equal efforts in the competitions of peace.

LACE AND HOSIERY AT NOTTINGHAM.

Lace.—The naturally quiet period for American exports is at hand, but trade so far has kept up remarkably well, and in some lines orders are still ahead of the machines. Good qualities of valenciennes in ivory and lower qualities in white are in favor. Embroidered veils and all-over nets of various kinds help to swell the output. Large quantities of torchons in white and linen shades are selling both for the home trade and for export. There is a special demand for cluny and some heavier laces, principally in écru and other tints. There is a fair demand for crochet laces in various widths. Irish trimmings are not in strong request, and ordinary embroidery and everlasting trimmings are depressed and the machinery has to be diverted to other uses. The same must be said of silk laces. There is a fair demand for plain, fancy, and spotted veilings and streamers. Plain tulles and spotted nets are in strong request for millinery purposes, and high prices are maintained. Corset and mosquito nets are moving in good quantities, and there is a limited demand for hat nets. Manufacturers of caps, aprons, pinafores, collarettes, ruffles, and other fancy articles are well employed. This part of the trade is a diversion originating in the dull times of a year or so ago, but has continued to increase steadily and is becoming quite a factor. The curtain, window-blind, and furniture-lace branches are doing an average business. There is an enormous output of goods, and the large possibilities of the trade seem to induce severe competition. There are many machines in Scotland and on the Continent, and the outside competition reduces the possibilities of former profits. Machine manufacturers are unable to supply the American demand for curtain machines, the leading firm here being now fifteen months behind on orders and having recently refused an order for thirty.

Hosiery.—There is a fair demand for cashmere hose at full prices. Merino and cashmere underwear is in good request. Natural wool and merino combinations are steady in value, and the machinery is fairly employed. There is a limited demand for silk stockings, half hose, and undershirts.

S. C. McFarland,
Consul.

Nottingham, *May 31, 1902.*

PACKING APPLES FOR GREAT BRITAIN.

I have recently received a communication from Mr. W. E. Boyes, of Leicester, chairman of the Conference of National Federation of Fruiterers, held at Cardiff May 12 and 13, 1902, transmitting copy of a resolution adopted by the federation, which reads:

> This federation wishes to call your attention to the unsatisfactory way in which the American apples are packed, and asks if it is not possible for you to adopt the same system as Canada, and have all the apples graded and stamped with the Government stamp. By so doing, you will largely increase the demand for best quality and, consequently, the price of American fruit.

It is stated in the report of the conference that Canadian apples are now graded and stamped with the Government stamp, and for all barrels sent out without the stamp the sender is liable to a fine of $1 for each barrel.

Richard Westacott,
Acting Consul-General.

London, *June 6, 1902.*

REGULATIONS CONCERNING AMERICAN SHOOKS.

In a report dated March 17,* relating to the increased demand for American shooks in the British lace and hosiery trades, the opinions of several importers as to the character of shook lumber required were given. As American exporters might, from those opinions, deduce the impression that miscellaneous board lengths, to be cut to box sizes here, would be admissible for export as shooks, it is well to state that such is not the case, but that the term "shooks" in paragraph 483 of the United States act of July 24, 1897, contemplates all the parts of boxes (tops, bottoms, sides, and ends) ready to be put together in the condition in which exported, and does not cover lumber in lengths. Failure to comply with this requirement has, in several instances, resulted in refusal of port authorities to grant export certificates, and the shipments received here remain unavailable, to the discomfiture of importers and the demoralization of the trade.

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*Advance Sheets No. 1326 (April 26, 1902).

S. C. McFarland,
Consul.

Nottingham, *June 2, 1902.*

MANCHESTER EXPORTS TO THE UNITED STATES.

Consul W. F. Grinnell transmits from Manchester, July 2, 1902, the following tables of exports of cotton velvets, cords, and fustians to the United States:

Month.	1901.			1902.		
	Dyed.	Undyed.	Total.	Dyed.	Undyed.	Total.
	Yards.	*Yards.*	*Yards.*	*Yards.*	*Yards.*	*Yards.*
January	353,937	452,702¼	806,639¼	509,942¾	596,615¼	1,106,558
February	314,416¼	713,484	1,027,900¼	307,672¼	451,680	759,352¼
March	281,870½	590,215⅝	872,086	240,991¼	600,696¼	841,688
April	288,669¾	497,383	786,052¾	497,447	612,065¾	1,109,512¾
May	536,286½	487,560¼	1,023,846¾	943,150¾	598,911¾	1,542,062½
June	631,556½	579,866	1,211,422½	949,819¾	652,024½	1,601,844¼
Total	2,206,737	3,321,211¼	5,727,948½	3,449,024¼	3,511,993½	6,961,017¾

Exports of cotton yarn to the United States.

Month.	1901.	1902.
	Pounds.	*Pounds.*
January	199,654¼	288,295
February	171,054¼	227,256¼
March	185,180	284,520
April	156,445¼	285,515
May	180,184¼	335,206
June	170,864¾	243,353
Total	1,063,383¼	1,664,145¼

MOVING VANS FOR TRANSOCEANIC USE.

Vans for moving household furniture from one city to another are much more common in Germany and other parts of Europe than in the United States. These vans, which are owned by companies with agents in different cities, are loaded with furniture and other household goods at residences, hauled on trucks to the railroad, and loaded on flat cars for their destination. Here, they are received by the company's local agents and are unloaded at the house where the furniture is to go. When possible, the van is reloaded in the same vicinity and sent back to the place of starting. Thus, one may see in Italy or France furniture vans from Berlin or Dresden.

The saving in packing and the avoidance of extra drayage and of the danger of breakage have made the system popular, especially in Germany. The vans in use here vary somewhat in size, many of them being almost as large as an American box car.

Recently, efforts have been made to extend the system so as to provide for the shipment of household goods across the ocean. A New York storage and van company has established connections in various parts of Europe and proposes to send vans abroad when satisfactory arrangements can be made. If a man living in New York, for example, wishes to remove to a city of Germany, he will be furnished with one or more vans, in which his household goods are placed. The van is transferred to the ship, and, on landing at the foreign port, is again transferred to the railway flat car or river boat and carried to its destination.

The agent of the New York company, who recently made a tour of the Continent, claims that in the short trial made the use of the vans has proved highly satisfactory, both in cost and convenience.

The vans employed by this company are 16 feet long by 8 feet wide and about 6 feet high. They are solidly built of wood, specially selected for protection against dampness, and are covered with thin sheet steel. They are readily conveyed onto and from ships and railway cars by the usual hoisting apparatus.

As a new phase of international commerce, the matter will be watched with interest.

H. W. HARRIS,
MANNHEIM, *June 4, 1902.* *Consul.*

PHOTOGRAPHIC SUPPLIES IN FOREIGN COUNTRIES.

It is the general impression that the United States leads the world in advertising. This may be true of many lines, but we are certainly behind in the advertising of photographic supplies. Some two years ago, I organized an amateur photographic club which counts five nationalities among its members. This has brought me in close touch with many interested in the art, and I am pleased to find that American photographic appliances have an exceptionally good reputation among foreigners. American manufacturers have reached a more satisfactory solution of the problem of a practical combined hand-and-stand camera than their foreign competitors, and two lines of American sensitized paper are recognized as very superior by advanced workers throughout the world. Our plates and films have a universal reputation for excellence, but owing to the very high prices asked for plates, the latter can not compete abroad with those of foreign manufacture. A good, reliable English plate can be bought for half the money asked for the American article. With this exception, we can hold our own in price. In quality we are not excelled, and in several lines not equaled. We have the material, but lack the enterprise to push our goods abroad. Among the thousands upon thousands of amateurs throughout the world, the demand is very large, and it is astonishing to find our makers behind the English, German, and French in catering to this demand.

Setting aside for the moment the subject of foreign advertising, we are without a single photographic publication in America carrying sufficient advertising to make the publication of special interest to foreign dealers on the lookout for photographic supplies. Other lines of American industry have trade journals that are widely patronized by the manufacturers, but the home photographic trade goes almost unrepresented. England possesses, in the British Journal of Photography Almanac, an annual publication which dealers and enthusiastic amateurs are glad to get. The number for this year (1902) is a bulky volume of 1,550 pages. Of these, 1,010 full pages are devoted to the advertisements of 245 advertisers. As many of the advertisers are general agents representing several manufacturers, there are probably four or five hundred different makers represented. I believe this publication to be one of the most valuable advertising mediums in the world. With the Journal Almanac in his hand, a foreign dealer is in close touch with the English supply trade. He finds there every novelty in his line, and as the leading manufacturers occupy enough space to cover briefly their whole field (several firms utilize upward of 30 pages each, and one well-known house fills 65 pages), the dealer has before him abridged catalogues of practically every maker in Great Britain.

Now let us see what the United States has to offer in this line. We have several very good photographic annuals, so far as the quality of the reading matter is concerned. Two of these are before me, and I find that in illustrations and general make-up they are in advance of the British annual referred to above. They have a comparatively large foreign circulation, and are much appreciated for the good things they contain, but they lack the most valuable feature of all—representative advertising. The 1900 issue of the American Annual of Photography, which is the largest of our annuals, contains 489 pages. Of these, 119 pages are devoted to advertisements, and the 70 advertisers represented seem, as a rule, content with a mere uninteresting address card. The publishers, who control a large photographic supply house, occupy most of the space. Foreign dealers obtain something even from this poor advertising array, but very little as compared with the British Almanac. The fault is not with the publishers. They offer a brighter setting for advertisements than their foreign contemporaries, and the advertising rates are no higher. It is our manufacturers who are at fault. If it were only possible to convince them of this and induce them to join in building up an American advertising medium like the British Almanac, our foreign trade in photographic supplies would increase greatly. I may appear to be overconfident on this point, but I have given the subject much study for the past six years and feel sure of my position. I have seen considerable orders for miscellaneous photographic supplies go to English manufacturers merely from the fact that the Almanac placed before the dealer a complete review of the latest novelties in the entire photographic line. Nothing could be learned about American goods without waiting for three months for catalogues, then to find, perhaps, that the wrong manufacturers had been applied to, and that certain desired goods could only be obtained from other makers.

Our manufacturers could not do better than to look the field over carefully, select one or more of our photographic magazines and their annuals, and give such publications their hearty support. Let them advertise with illustrations and descriptive matter their most popular lines. The foreign dealer and amateur will, without great delay, find out the journals containing the most advertising, and these publications will soon be in possession of a circulation sufficiently large to make the trifling sum which the manufacturer has expended a splendid investment. Photographic societies are in existence now throughout the world, and they subscribe to the leading photographic papers—American, English, and German. Amateurs vie with one another in obtaining the best apparatus and latest photographic novelties; thus the advertising pages are of exceptional interest. Manufacturers should, therefore, value photographic journals for the quality of their circulation rather than the mere number of copies each may issue.

In foreign advertising, American manufacturers apparently take but little interest. I find in the Tokyo Shashin Geppo (Photographic Journal) 4 German, 2 English, and 2 French advertisers represented, and in the Shashin Shimpo (Photographic News) 9 English, 5 German, 2 French, and 1 American. The charge for space in either of these journals is about $4 a half page and $7 a full page for English text. An equal space with Japanese text is given gratis. A large discount is made for two or more insertions, and no charge is made for Japanese translations.

Three or four of our largest manufacturers are heavy purchasers of expensive space in our home magazines, but only the kodak cameras are well advertised in Europe. A small part of the appropriation for American advertising, if expended in foreign journals, would introduce our goods abroad and lay the foundation of a valuable trade. We have many good things in the photographic line. We should let the world know it.

JAMES W. DAVIDSON,
Consul.

TAMSUI, *April 10, 1902.*

LIVE STOCK IN CUBA.

The Department has received from Minister H. G. Squiers, of Habana, under date of July 17, 1902, translation of a message sent by President Palma to the Cuban Congress regarding changes in customs duties on live stock and on barbed wire, as follows:

REPUBLIC OF CUBA,
Executive Mansion.

CONGRESS:

So imperious is the necessity of reestablishing the raising of live stock, the most natural and certain of all the resources of this country, that the Executive believes—and without prejudice to the direct aid which he proposes to ask of Congress for its encouragement and development—that private initiative should be stimulated by all possible means, furnishing it a way to enable it to contribute, under favorable circumstances, to the same end.

To demonstrate this necessity and the incalculable benefit which providing for it would bring to the country, the following considerations are, in the opinion of the Executive, sufficient:

(1) Of the 900,000 caballerias (30,000,000 acres) of which the land comprising the territory of this island is composed, 500,000 caballerias (16,600,000 acres) are at present uncultivated, for which reason they produce nothing. They are, however, adapted to the raising of cattle, and in them at least 4,000,000 head could be splendidly cared for, at the rate of 8 per caballeria (33⅓ acres);

(2) Some 300,000 head being on an average the number consumed in the island in one year, when Cuba succeeds by the restocking of her cattle farms in producing the same, their value—reasonably estimated at $30* per head—would amount to $9,000,000, a sum which would remain in the country instead of going to the foreign lands from which such cattle are now obtained—and this aside from the $2,000,000 approximate value of the jerked beef at present consumed, aside from the value of the hides, which can be estimated at $1,500,000, and aside from the amount derived from cattle which could be exported to other countries from the surplus of Cuban stock; and

(3) Of the 400,000 head received throughout the island during the year, 200,000 should be sent to pasture before being slaughtered, according to reports from authentic sources. As lean cattle, in the six months' pasture which it requires to fatten, should, according to the estimates of competent persons, yield a profit of at

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* The present value of the Cuban dollar, or peso, is about 60 cents in United States currency.

least $10 to the cattleman for the greater weight obtained, it results that if these 200,000 head are brought in lean to be sent to pasture instead of coming in fattened for immediate slaughter, their fattening in this country would yield $2,000,000, which would be distributed among the cattlemen and planters; or, that is to say, by receiving them fattened the country would not enjoy this considerable profit, but it would go to increase the treasure of a few merchants and of the foreign raisers. However, while we are arriving at this longed-for result—that is, of producing in Cuba the number of cattle required for its consumption—it becomes indispensable to enact efficacious provisions directed not alone to the reproduction of this cattle, but to causing that which is received from the exterior, in the meanwhile, to yield a profit to the country before its slaughter, instead of obtaining it solely—as to-day happens in the majority of cases—with reference to fattened cattle. The Executive is consequently of the opinion that the thing to do is to amend the present customs tariffs to attain the end in view, as a principal means for stimulating private initiative in this matter; the customs tariffs in force to-day tending more to favor speculators than to protect the raising of cattle in Cuba. Under these tariffs (class 10, group 1) the duties paid on live stock on its importation into this island are the following:*

Paragraph 181.

Horses and mares:		
(*a*) Those exceeding the established height	each...	$10
(*b*) All others	do......	5

Paragraph 182.

Mules	each...	5

Paragraph 183.

Asses	each...	5

Paragraph 184.

Cattle:		
(*a*) Oxen	each...	2
(*b*) Cows	do......	2
(*c*) Young oxen and cows	do......	2
(*d*) Calves	do......	1

In conformity with the foregoing, the Executive has the honor to submit to Congress' consideration, for the decision it may desire to adopt, the following bases:

The following scale shall govern the collection of tariff duties on cattle imported into this island at any one of the ports of Habana, Matanzas, Cardenas, Sagua la Grande, Nuevitas, Gibara, Cienfuegos, Tunas de Zaza, Santa Cruz del Sur, Manzanillo, and Santiago de Cuba, the only ones equipped for the purpose. The following will enter free of tariff duties:

(1) Cows fit for breeding and heifers.

(2) Cows with their young, on foot.

(3) Bulls of the Jersey, Guernsey, Devon, Durham, Herefords, Porto Rico, and Argentine Republic breeds, provided the importer duly accredits their origin, states at the time of importation the ranch or farm to which they are destined, and guarantees that they will remain on the farm stated for the period of one year, under penalty of payment of the following duties:

If guaranty is not given, each will be assessed		$15.00
Yearling calves	each...	1.00
Fat cattle, male, from Florida, fat to be understood as not exceeding 550 pounds (253 kilograms) in weight	each...	5.50

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* Paid in United States gold or its equivalent.

Fat cattle, male, from Honduras, fat to be understood as not exceeding 600 pounds (276 kilograms) in weight.......................................each...	$6.00
Fat cattle, male, from Mexico, fat to be understood as not exceeding 700 pounds (322 kilograms) in weight.......................................each...	7.00
Fat cattle, male, from Venezuela and Colombia, or countries other than those mentioned, fat to be understood as not exceeding 800 pounds (368 kilograms) in weight.......................................each...	8.00
Lean cattle, or that weighing less than the above-mentioned weights, according to their origin.......................................each...	2.00

No lean cattle shall be slaughtered before at least three months after their landing. For this purpose, they shall be branded on entry into the ports of the island with an iron or brand showing that they are for pasture. Before any cattle which may carry the mark referred to are slaughtered, it shall be proven, in the manner which may be provided, that they have been in pasture for the period of three months mentioned. The slaughter of cows is prohibited, excepting those which may be useless for breeding, this to be properly proven. No new tax over those at present established, which might affect the consumption of cattle, shall in any form or for any purpose be collected during the period of three years. The present tariff is likewise amended with regard to horses and mules, and the following rules established:

Stallions exceeding the height established (150 centimeters—59 inches—measured by rule) and he asses shall enter free of duty.

Mares exceeding the aforesaid height will pay.......................................each...	$14
Same, of less height.......................................do.....	7
Geldings exceeding the aforesaid height.......................................do.....	15
Same, of less height.......................................do.....	5
Mules exceeding the established height.......................................do.....	10
Same, of less height.......................................do.....	5

For the period of one year, barbed wire and staples used in the construction of fences will be exempted from the payment of tariff duties.

The decision which Congress may adopt as a law will not take effect before ten days after its publication. The Government will issue the orders and instructions necessary for the enforcement of what Congress may resolve, in case the preceding bases are approved.

THE PRESIDENT.

HABANA, *June 21, 1902.*

CATTLE INDUSTRY IN PARAGUAY.

Consul J. N. Ruffin, of Asuncion, under date of May 31, 1902, says:

In view of the many inquiries received from persons in the United States interested in the cattle industry of this country, I inclose a letter on the subject from the Paraguayan Department of State, and another from a land company, showing the cost of property. I also submit statements of the probable cost of a cattle ranch and beef establishment.

EXTRACT FROM LETTER OF MANUEL DOMINGUEZ TO MR. RUFFIN.

In reply to your request for information desired by various persons in the United States in regard to obtaining land in the country for the cultivation of products and the raising of cattle, it gives me pleasure to communicate that this Government, taking into consideration the importance of the enterprise, is disposed to accord all the facilities possible. The Department of State has made investigation of the matter, and has to say that it has at its disposal the following lands north of Asuncion:

(1) Forty leagues in the Department of Horqueta, near Villa Conception, serving in part for cattle raising and in part for agriculture.

(2) Eight leagues in the Department of San Pedro, 3 leagues from the Paraguay River and on the River Jejui, which empties into the same. It is settled by people of various nations, whose rights are included in the land mentioned.

(3) Eighteen leagues in the Department of Villa Del Rosaria, about the same distance from the Paraguay River.

(4) Fifty leagues in the Departments of Ajos, Mbocayaty, and Caaguazú, on the Tebicuary River, which also empties into the Paraguay River.

In the Department of Asuncion there do not exist any public lands, but the Government can expropriate land. The interested parties should determine the extent of the products desired to be cultivated, or the importance of the beef establishment which they propose to erect, and they can without difficulty procure the lands which they may need.

To the north as well as to the south of the capital, there exist various cattle ranches where interested parties would find a sufficient quantity of animals for the establishment of a beef-extract factory.

The price of the best land for cattle raising south of Asuncion may be valued at about $3,000 gold a square league and about $2,000 gold near the river.

There is one dried-beef establishment on the northern frontier on the Paraguay River, which is prosperous, although it is remote from Asuncion and from the ports of the River Plata.

I annex copy of a law respecting beef establishments. I shall be pleased to transmit any other information desired upon this matter.

TRANSLATION OF LAW GIVING CONCESSION TO BEEF ESTABLISHMENTS.

ARTICLE 1. There are granted to enterprises for preserving as well as making extract of beef the following exemptions and privileges up to December 31, 1910: First, free introduction of all machinery and other elements necessary for the buildings and installations, materials for packing their products, common salt, and the chemical substances necessary; second, exemption from export duties on all the products and by-products of the industry.

ART. 2. The concessionnaires should comply with the procedures established by the law and the custom-house regulations for import and export.

ART. 3. The executive power will determine the minimum number of animals to be killed annually in the establishment, to give effect to this concession.

ART. 4. If the establishment ceases to work during twelve consecutive months, it will lose its concessionary right, except in case of force majeure.

ART. 5. The Executive will appoint an inspector to examine the products while they are being prepared in the establishment; his monthly salary will be $50 gold, to be paid by the concession establishment.

ART. 6. The Executive will limit annually, in proportion to the importance of the beef establishments, the quantity of effects to be entered free from import duties.

ART. 7. The establishments will pay to the State 50 per cent of the tax on each hide exported or for each animal killed.

ART. 8. If the establishment is of a modern system, with refrigerating appliances, it will pay only 10 cents gold for each animal.

ART. 9. All articles or merchandise which the concessionnaires import or export in contravention of this law will be confiscated and the concession declared void.

ART. 10. The beef establishments must have their legal domicile in the Republic and keep their accounts in the language of the country (Spanish).

LETTER FROM ANGLO-PARAGUAYAN LAND COMPANY TO MR. RUFFIN.

In answer to your query of the 23d instant re our lands on the River Paraguay, I beg to inform you that we own some 120 leagues, more or less, answering to the above conditions. These lands are in three lots, viz:

Block B (area 59 leagues 1,554 squares), situated in front of Ita pucu-mi, with frontage on River Paraguay of 6 leagues. It contains first-class grazing land and is well watered. There is also a large number of quebracho trees and black palms. The quebracho has been worked for the last five years under royalty, but the contract expires next month. Five square leagues of grazing land are also rented for the next three years. This block is really one of the finest in the Paraguayan Chaco. Our price is £250 ($1,216) per league, or, say, $75,000 gold for the whole property. The company would probably not sell less than 10 leagues of this or any of their Chaco lots.

In Block C, we have still 10 square leagues to sell, but, as several parties are proposing to purchase, further description is useless.

Block D contains 54 odd leagues, and lies a little north of Villa Conception. It is first-class grazing land, with a frontage on River Paraguay of 5½ leagues. Our price is £275 ($1,338) per league, and we could arrange easy terms of payment, extending over four years, if land were mortgaged in our favor and reasonable interest paid.

I am sure my board would welcome any proposition for the erection of a modern meat-extract factory, but with regard to cattle I am unable to say. My company's address is Dashwood House, 9 New Broad street, London, E. C.

Our lands have first-class titles, having been ceded to the foreign bondholders by the Paraguayan Government in payment for coupons of the external debt.

As you know, there is a good demand for Chaco lands, so that the above are not likely to be in the market for any length of time.

APPROXIMATE COST OF A MEAT ESTABLISHMENT, AND OTHER DATA.

10 leagues of grazing land at $1,250 per league	$12,500
House for the owner or superintendent	1,200
Houses for workmen	300
Sheds (one large and one small)	200
2 artesian wells	150
2 cattle yards	200
2 small cattle yards	80
Fencing wire	2,000
7 acres of land for gardening, etc	130
Various plantations	100
4,000 cows, from 3 to 8 years old, at $7 each	28,000
400 bulls, from 3 to 4 years old, at $8 each	3,200

1,000 oxen, 3 years old (to fatten), at $8 each	$8,000
150 horses (including colts and studs)	3,000
300 sheep at $1 each	300
20 working oxen at $10 each	200
2 bullock carts	150
Sundries	200
Saddles, lassos, etc	200
1 overseer, at $7 gold per month, per year	84
6 cowboys, at $3.50 gold per month, per year	252
2 boys at $2 gold per month	48
2 cooks at $2 gold per month	48
1 washerwoman at $2 gold per month	24
1 shepherd boy at $2 gold per month	24
1 farmer at $5 gold per month	60
Cost of living for all employed	360
Various expenses	60
Total cost of a well-organized ranch	61,070

Notes.

Cattle can be purchased in Matto Grosso, in Brazil, at the northern boundary of Paraguay, large and small together, for about $5 gold apiece. Cattle for killing purposes cost as follows: Fat cows, $8 to $8.50 each; fat heifers from 3½ to 4 years old, $9 to $9.50 each. By buying a drove of 20,000 or 30,000 head of Brazilian cattle, many fat heifers may be obtained at $8 each.

A heifer 3½ or 4 years old yields the following: A salted hide from 30 to 32 kilograms (66 to 70 pounds) in weight, about $5 gold; tallow and grease sell in Buenos Ayres for $2 gold; fresh meat, 300 to 350 pounds, salted, in Buenos Ayres, $7.50 gold; tongue, bones, hair, etc., 50 cents—making a total of $15 per heifer.

The general expenses for fuel, tins, pipes, labor, and freight to Buenos Ayres are calculated at $3 to $4 gold, thus making the total cost of preparing the animal and shipping it about $12.50 gold, leaving a gain on each animal of from $2 to $2.50 gold. Thus, an establishment killing 20,000 head per season makes from $40,000 to $50,000.

Bricks (2 by 5 by 11) cost here $5.50 gold per 1,000, and a suitable building could be erected for $100,000 gold.

The cattle are fattest in the summer and autumn, and refrigerating machinery is necessary for boiled and corned beef. Paraguay is so thinly populated that it will be a century before it is short of pastures for breeding cattle.

TRADE AND INDUSTRIAL CONDITIONS IN BAHIA.

The following report has been received from Consul H. W. Furniss, of Bahia, Brazil:

Trade in this district has suffered much in the past few years, the depression dating from the drought in 1898 and the subsequent inability of that part of the population dependent upon the soil to liquidate their debts. Then, the Federal Government, in its attempt to elevate the gold value of the ever-fluctuating paper currency, has materially decreased the paper value of exported products, and this district, being primarily an agricultural section, has suffered very much as a result.

It is additionally unfortunate that nearly all the products of this district—such as tobacco, coffee, cocoa, sugar, and manganese—have fallen in value in the markets of the world. It now costs the producer more to gather many of his products and get them to market than he can hope to receive, while the money he obtains buys little if any more than was the case when it was worth half its present gold value and he received more than double his present paper price.

METHOD OF COLLECTING REVENUE.

In the matter of exchange and revenue collection, the policy of the federal and State governments is so at variance as to demand more than passing notice.

The Federal Government desires to increase the value of the paper milreis and is trying to bring about this result by constantly decreasing the volume of paper money in circulation, and making provision by the 25 per cent of customs collected in gold for sufficient of that metal with which to meet promptly the interest on the public debt; by buying in the railroads to which the Government had guaranteed interest charges; by leasing, where possible, these railroads, thus considerably reducing the interest charges upon the bonds of purchase; by cutting down running expenses; and, finally, by imposing additional taxes to increase receipts and create a surplus with which to pay off old obligations. This policy is depended upon to improve the Government's credit.

The greatest sources of income are the customs duties and the internal-revenue taxes, which have now been increased, so as to fall upon almost all articles of consumption.

The Federal Government argues that, although the effect of this increased exchange may be detrimental for the moment, a currency in specie, convertible into notes, will create a permanent credit abroad and attract foreign capital for investment, and the sooner the Government can bring about this condition the better it will be for all concerned. It further argues that, though the internal taxes may be arduous, yet they are needful to increase the revenue and make receipts meet expenditures.

Over three-fourths of the revenue of the State of Bahia and one-fourth of that of the city of Bahia are collected as an export tax. The other fourth of the State's revenue is derived from taxes on professions, businesses, etc., and the stamp tax on legal documents; the remaining three-fourths of the city's revenue comes from various sources.

The State and city are always dependent on the value of the paper milreis, as the export duty is a fixed per cent charge on the market value of the product exported. Any increase in exchange causes a reduction in the paper-milreis value of articles for export, and this, consequently, lessens State and city revenues. The duty charges are fixed each year; but during the past few years, with the upward tendency of exchange and the rise in value of the paper milreis from 11 to 25 cents, the amount actually collected has fallen far short of the estimate. The export duties of the State were already burdensome when the paper-milreis value of the exports was double what it now is, yet with the lowering of that value the duties have been increased, until now they are at the topmost notch, in some cases being 24 per cent ad valorem.

The decrease of revenue, as a result of high exchange, has forced the State and city governments to seek additional sources of income, which have been obtained from taxes on articles, professions, and other things which heretofore have been exempt. There is no hope for better conditions until either exchange becomes steadier and prices are equalized, or until there is a resumption of specie payment.

COMMUNICATION.

The following table shows the steam communication of this district with the rest of the world, all of the lines touching at Bahia City except that navigating the San Francisco River:

Steamboat and steamship lines which touch at Bahia.

Steamship line.	Nationality.	Head office.	Intervals of sailing.	Itinerary.	
				From—	To—
Trans-Atlantic.					
Lamport-Holt Line*	Belgian-British.	Liverpool	Semimonthly	New York	Rio.
Sloman Line	German	Hamburg	Irregular	do	Santos.
Royal Mail Steamship Company.	English	Southampton	Fortnightly†	Southampton	Buenos Ayres.
Pacific Steamship Navigation Company.	do	Liverpool	Monthly	Liverpool	Chile.
Norddeutscher Lloyd	German	Bremen	do	Bremen	Santos.
Hamburg-Südamerikanische Dampfschiffsgesellschaft.	do	Hamburg	Weekly	Hamburg	Do.
La Ligure Brasiliana	Italian	Genoa	Monthly	Genoa	Rio.
Linha de Vapores Brazil-Adriatico.	Austrian	Trieste	do	Trieste	Santos.
La Veloce	Italian	Genoa	do	Genoa	Buenos Ayres.
Société Générale de Trans-Atlantique Maritimes.	French	Marseilles	do	Marseilles	Santos.
Chargeurs Réunis	do	Havre	Fortnightly	Havre	Do.
Compagnie des Messageries Maritimes.	do	Bordeaux	Monthly	Bordeaux	Buenos Ayres.

*Also has various other sailings, stopping at Bahia en route for New York when cargo is offered, and from three to four boats per month from England, returning from Rio to New York when no cargo is offered here.

†Also one or two cargo boats per month for Europe.

Steamboat and steamship lines which touch at Bahia—Continued.

Steamship line.	Nationality.	Head office.	Intervals of sailing.	Itinerary.	
				From—	To—
Coastwise.					
Compagnia Pernambucano de Navagação.	Brazilian	Pernambuco	Monthly	Pernambuco	Bahia.
Compagnia Nacional de Navagação Costeira.	do	Rio	Weekly	Rio	Pernambuco.
Compagnia Paraense de Navagação.	do	Para	Irregular.	Para	Santos.
Lloyd Brazileiro	do	Rio	Weekly	Rio	Manaos.
Bahia Bay.					
Navagação Bahiana	do	Bahia	Various	Bahia	Various.*
San Francisco River.					
Empreza Viação do Brazil.	do	Rio	Semimonthly	Joazeiro	Minas-Geraes.

*Consists of several lines sailing daily for Itaparica, Salines, Madre Deus, Santo Estevao, and Bom Jesus; Tuesdays, Thursdays, and Saturdays for Cachoeira, Nazareth, Santo Amaro, and Valencia, and returning Mondays, Wednesdays, and Fridays; also two boats per month, touching all ports south to Vicosa, Bahia.

FREIGHT RATES.

The freight rates out of Bahia continue to be pooled, those lines carrying freight to New York and those going to Southampton, Liverpool, and Hamburg being combined. It is impossible to give actual rates, as some large shippers obtain considerable rebate. Indeed, to such an extent is this true that I have heard of shippers who frequently control the market because they can pay foreign delivery prices for products, their profit on the business being the freight rebate. The present schedule of freight rates out of Bahia is as follows:

Article.	New York.		Liverpool and Southampton.			
	Rate.	Unit.	Rate.		Unit.	
			Shillings.		*Kilograms.*	*Pounds.*
Coffee	30 cents and 5 per cent.	Bag (132 pounds)	22½	$5.47	1,050	2,310
Cocoa	40 cents and 5 per cent.	do	22½	5.47	800	1,760
Coquilhos	35 cents	do	22½	5.47	1,000	2,200
Hides:						
Dry	35 shillings	1,430 pounds	22½	5.47	650	1,430
Wet	45 shillings	2,200 pounds	22½	5.47	1,000	2,200
Piassava	35 shillings	1,320 pounds	22½	5.47	600	1,320
Rubber	50 cents	99 pounds	22½	5.47	700	1,540
Tobacco			22½	5.47	600	1,320
Skins	50 shillings	2,200 pounds	22½	5.47	650	1,430
Wood	25 shillings	do	22½	5.47	1,000	2,200

Article.	Havre and Genoa.				Hamburg and Bremen.			
	Rate.		Unit.		Rate.		Unit.	
	Francs.		*Kilograms.*	*Pounds.*	*Marks.*		*Kilograms.*	*Pounds.*
Coffee	35	$6.75	900	1,980	30	$7.14	1,050	2,310
Cocoa	35	6.75	700	1,540	30	7.14	800	1,760
Coquilhos	35	6.75	1,000	2,200	30	7.14	1,000	2,200
Hides:								
Dry	35	6.75	600	1,320	30	7.14	650	1,430
Wet	35	6.75	1,000	2,200	30	7.14	1,000	2,200
Piassava	35	6.75	600	1,320	30	7.14	600	1,320
Rubber	35	6.75	700	1,540	30	7.14	700	1,540
Tobacco	35	6.75	600	1,320	30	7.14	600	1,320
Skins	35	6.75	600	1,320	30	7.14	650	1,430
Wood	35	6.75	1,000	2,200	30	7.14	1,000	2,200

Article.	Marseilles.				Bordeaux.			
	Rate.		Unit.		Rate.		Unit.	
	Francs.		*Kilograms.*	*Pounds.*	*Francs.*		*Kilograms.*	*Pounds.*
Coffee	*30	*$5.79	1,000	2,200	30	$5.79	900	1,980
Cocoa	*30	*5.79	700	1,540	30	5.79	700	1,540
Coquilhos	*30	*5.79	700	1,540	30	5.79	1,000	2,200
Hides:								
Dry	*30	*5.79	650	1,430	30	5.79	800	1,760
Wet	*30	*5.79	650	1,430	30	5.79	1,000	2,200
Piassava	*30	*5.70	600	1,320	30	5.79	1,000	2,200
Rubber	*30	*5.79	600	1,320	30	5.79	350	770
Tobacco	*30	*5.79	600	1,320	30	5.79	600	1,320
Skins	*30	*5.79	650	1,430	30	5.79	600	1,320
Wood	*30	*5.79	1,000	2,200	30	5.79	1,000	2,200

*And 10 per cent.

I have frequently pointed out the necessity for an American line of steamers for Brazilian ports, and year by year the need for such a line becomes more imperative.

At present there is but one line of steamers from here to the United States, and freight rates are far in excess of those from Europe to Brazil.

MAIL SERVICE.

There is always some complaint about the mail service to and from the United States. Independent of the slowness of the regular boats, the arrival of the mail is most erratic and often causes merchants considerable inconvenience and expense. For instance, frequently of late a supplemental mail has been dispatched from New York, via some Brazilian port, a week in advance of the regular boat and has arrived here many days after the regular boat. In some instances, this has caused loss of money to the merchant whose consular invoice and bills of lading, etc., caught the first boat, while his goods were on the second boat and had to be put in warehouse and pay storage and other additional charges awaiting arrival of the necessary documents.

A prompt mail service is necessary for any kind of business, particularly when competition is as keen as it now is between Europe and the United States.

RAILROADS.

No new railroads have been started during the year, but considerable progress has been made on the State's branch line from San Miguel, the Tram Road de Nazareth, with the final destination of Areia, 58 kilometers (36 miles) distant. Already 18 kilometers (11 miles) have been completed and the grading for the roadbed has been finished 12 kilometers (7.4 miles) farther. The portion of the line completed is in use.

The rolling stock was contracted for and the greater part of it was delivered before there were 10 kilometers (6.2 miles) of the line completed. It seems to have been bought without regard to present or future requirements. According to the Secretary of Public Works, the road has an equipment three and a half times in excess of its needs. The equipment consists of 2 new modern American engines, 13 passenger cars, 4 combination baggage and mail cars, 6 live-stock cars, 46 freight and 1 inspection car, though there is but one train per day.

On October 13, 1901, the State leased this line for a period of five years to the Tram Road de Nazareth, which obligates itself to care for same, the State bearing all necessary expense for repair, etc., and in case of deficit the State to pay it.

The Federal Government on July 1, 1901, took possession of the Bahia and San Francisco Railroad and the Timbo branch of same, having purchased the lines from an English company with head offices in London. At the time these roads were being built, the Government guaranteed the interest, for a term of years, on the capital invested. The earnings of the line have never been sufficient to cover the working expenses and the Government has been compelled to pay the guaranty for all these years. It has now purchased the lines, which will reduce its annual interest payments about £15,000 ($72,900).

The following table shows the receipts and expenditures of the various railroads in this district for the year ended December 31, 1900:

Receipts and expenditures of railroads in Bahia.

Name of road.	Length of line.	Receipts.		Expenses.	
	Miles.	*Milreis.*		*Milreis.*	
Tram Road de Nazareth	49	774,474.988	$162,639.75	563,631.027	$118,362.56
Bahia e Minas	88	112,265.804	23,575.82	124,720.629	264,191.33
Santo Amaro	22	223,911.060	47,021.32	260,365.403	54.676.73
Central Bahia	185.7	1,162,133.080	244,047.95	1,261,801.620	264,978.34
San Miguel a Areia	34.8	None.	None.	1,291,398.508	271,193.69
San Francisco	218.7	1,084,457.570	227,736.09	1,157,042.832	242,978.99
Bahia e San Francisco	76.4	980,338.067	205,870.99	1,339,373.156	281,268.36
Ramal do Timbo	32.9	107,059.852	22.482.57	217,424.016	45.659.23
Centro Oeste da Bahia	17.4	....	....	....	....

MINERALS, MINES, AND MINING.

The greatest drawback to mining in this section is the almost total lack of mining laws and the ignorance regarding those in existence. I have frequently made application for information to the proper departments, which have been unable to comply with my requests because such laws as are in existence are so scattered as to require a great deal of labor to compile them.

Manganese.—The supply of manganese in this district has been considerably increased by the discovery of several new mines, but for the most part the new discoveries are remote from direct lines of transportation. The mines which have been operated for the past few years were almost idle in 1901, because of the decrease in the gold price of ore abroad, coupled with the increase in value of the paper milreis, which has made the ore cost almost its market value to mine. Labor is scarce in all mining sections. During the year 1900, there were exported 18,407 tons of ore, of which 11,486 tons went to the United States, but during the first six months of 1901 none was exported for the reasons already stated.

Gold.—During the past year, there have been a number of prospectors and mining engineers through this section, in search of new mines or to examine those already in existence. In spite of the great number of places at which gold is found in working quantities, I do not think that much can be done in this line for some years to come. The chief difficulty is the remoteness of the findings from regular lines of traffic or bases of supplies, coupled with the fact that, in most instances, the gold occurs in hard rock, necessitating modern machinery for its extraction. The cost of transporting and installing a plant would be enormous.

Many of the findings are so situated that water and electricity might be used to furnish the power, but under present conditions, with the great cost of labor, food, etc., I do not think that many locations would warrant the expense.

Mica.—This mineral has been found in various places throughout the State; but heretofore only deposits producing small pieces have been discovered. Recently, a couple of mines from which quite large and clear slabs have been taken have been located and the samples submitted for foreign examination. As yet, none has been exported.

Carbons.—There have been a few good finds of carbons lately. One weighing 762 carats was recently brought to market and sold for 90,000 milreis, an equivalent of $20,700. The find during the year has been rather small, and prices have been comparatively firm, varying from $30 to $40 per carat.

Recently, a company was organized in Paris to mine diamonds and carbons in the famous Paraguassu district. This company has taken over a lease owned by a Brazilian carbon and diamond dealer. The leased land is rented from the State government for a term of four years.

It is impossible to even approximate the carbon output. The dealers here are very chary of giving information, and because of the high export duty only a small part of the stones mined pay the tax. During the first six months in 1901 the tax was paid on 2,050 grams, while one of the largest dealers estimates that the carbon output alone would weigh over double that amount.

Monazite sand.—This continues to be controlled by one party, who now enjoys both federal and State monopolies. I understand that there have been new deposits discovered, both in this State and the adjoining one, but I can not find that any attempt has been made to ship any of the sand from these new sources. During the year 1900, 1,481 tons of monozite sand were exported and 808 tons were shipped during the first six months of 1901, all of which went to Germany, and yielded the State 252,375.984 milreis ($52,998.96) in revenue, being £3 ($14.59) per ton plus the export duty.

HIDES AND SKINS.

The trade in these articles has suffered very much during the year, chiefly because the raisers of cattle lost so many animals during the drought that now they are trying to increase their herds, and only sell or slaughter when they need money.

The export trade in hides has also suffered as a result of the increased value of the paper milreis, which has materially lessened the amount that can be offered by the exporter. On the other hand, the native tanner is in a position to pay a higher milreis price and is buying great numbers of hides and making common leather, which meets with ready sale at a large profit. Heretofore, the native tanners have been content with "refugo" hides, but now the price enables them to buy prime stock.

As a result of this altered condition, an American hide-export firm has opened a tannery for the commoner kinds of leather and has figured that it will more than treble the profits of the export trade.

COFFEE.

The cry from all sides has been that exchange has killed the coffee industry, and one must admit that it has affected it greatly; yet, by giving proper attention to plantations and improving the processes of drying, hulling, and grading, there is no reason why there should not be a good profit in the business.

The recent report of the Dumont Coffee Estates in Sao Paulo shows that the company, by introducing modern machinery, so improved the quality of the output that its coffee commanded a price of more than 12½ per cent above the average. After the company had paid all working expenses, it had a net profit sufficient to declare a 10 per cent dividend on a capital in excess of the present worth of the plantation.

COAL.

Conditions continue to be most favorable for the introduction of our coal, provided the business is properly managed.

The first full cargo of United States coal to come here (May 24, 1901) was 1,753 tons of gas coal for the local gas company. This coal arrived at Bahia in good condition and gave excellent results. By the gas people, it was said to be the best coal that has ever been used here, though the gas produced seemed to have a greater amount of sulphureted hydrogen than usual. However, that may be attributable to the bad condition of the gas works or to improper methods of manufacture. Unfortunately, the works changed hands soon after the coal was received, and because of the delayed arrival of the sample shipment (the first vessel with the order having foundered at sea) the company contracted elsewhere for a supply sufficient for some time to come.

I am convinced that there is a good market for our coal here. All that is needed is someone at home to take proper interest in the matter.

The following table shows the quantity of coal of all classes imported during the past three years:

By whom imported.	1898.	1899.	1900.
	Tons.	*Tons.*	*Tons.*
Regular dealers	50,000	31,000	51,393½
Railway company	3,200	4,400	6,060
Other parties	6,396	7,038	....
Total	60,136	42,438	57,459½

NOTE.—The quantity imported by regular dealers includes, on on average, 5,000 tons of gas coal for the local gas works. All the rest of the coal was steam coal.

The present price of steam coal, styled "treble screened," is 52s. ($12.65) on shore to buyers without contracts; 46s. ($11.19) free alongside of ship bringing cargo, and 49s. ($11.92) trimmed into men-of-war without contracts. It is impossible to ascertain the contract price, but I understand that it runs from 2s. to 6s. (48 cents to $1.46) less per ton.

COMMERCIAL TRAVELERS.

Commercial travelers coming to Brazil continue to have trouble because of their ignorance of the tariff laws. In accordance with the new tariff regulations, it is necessary that all articles (except personal effects in actual use) shall not only be declared, but that they have a consular invoice from the port of embarkation. In all Brazilian consulates there can be found a copy of the official nomenclature of the Brazilian custom-house, printed in the language of the country in which the consulate is located, and this should be freely consulted in making up declarations.

All samples must be declared under their proper heads, either in the language of the passenger or in Portuguese; in the former case it would necessitate translation of declaration at port of entry. Only small pieces should be taken as samples, as whole articles, of whatever form, pay duty. Whole articles, like socks, shawls, etc., rendered useless by cutting off corners, punching holes through same, etc., are classed as samples; but one perfect article of a pair, as one sock, often has to pay duty under its specific class.

I have frequently called attention to the necessity of having correct invoices of contents of each sample trunk or package, as it is necessary to declare what is in each.

It is important that a traveler should have a letter of introduction to some banker at the place he intends to stop, and this can be arranged either with his letter of credit, by letter from his firm if it has already done business through any bank, or by his firm's home bankers. Such a letter is very important, as it is chiefly through banks that one can ascertain the financial standing of Brazilian firms, there being no commercial agencies.

Above all, I would not advise any traveler, unless he can speak Portuguese or Spanish, to come to this country, where few people know English.

Few travelers on their first trip do more than pay expenses, particularly if they are traveling for a firm new to the section. This fact should be kept in mind. A first visit introduces one to prospective purchasers, makes a traveler conversant with the needs and requirements of the markets, puts him in a position to know just what to do and how to do it on a future trip, when sales will be increased proportionately.

It would be well for a traveler to study the system and requirements of the various custom-houses, as each has its little peculiarities, a knowledge of which is quite useful.

Brazilian authorities never request passports, but it is most desirable that everyone coming to this country should have one. A passport would obviate much unnecessary trouble.

The only commercial traveler's tax is the State tax of 100 milreis ($23), to be paid but once during each year. It is seldom paid, however, because most travelers first appoint an agent here and then claim to be simply showing goods under direction of that agent, and under such conditions collection is not forced.

HOW TO DO BUSINESS.

In view of the fact that a large number of United States firms write the consulate for information, it is surprising how few avail themselves of the opportunities offered. Many of our houses do not seem to realize the excellent chances in this market for their productions and, in fact, make no attempt to find out the conditions existing here. Some obtain from associations organized to furnish information in regard to foreign dealers a list which purports to be correct. In many instances, however, such information is misleading. Either there are no such firms in existence or they deal in a different line from that given in the list. A number of such instances have occurred here, and I cite one.

A local firm, the only dealer in photographic apparatus and supplies, requested me to write to some large house in the United States for catalogues and prices. With a view to increasing our trade relations, I did so and received a prompt reply, in which the firm stated that it could not furnish the desired information, as the exclusive agency had been offered to Blank & Co., of Bahia, to whom they had sent extensive samples and would have to await the latter's reply before it could act. The firms to which the samples had been sent are job printers. It has no knowledge of the photo-supply business, does not care to enter it, and has no place at its disposal for display. It had had samples and letter for some time and had not even replied to the latter which, by the way, was not properly addressed to them. The samples were not in the printer's line and the firm had not bothered about the matter. Meantime the firm in whose behalf I had written has made connections with England.

It seems most remarkable that a creditable American house should offer its exclusive agency and send a full line of samples to a firm to which it had never before written and of which it did not even have the proper name, let alone any knowledge in regard to the nature of its business or its financial standing.

I am not in favor of giving exclusive agencies either for Brazil or Bahia. Brazil is too large a country, and the ports are too independent of each other to permit that. It is necessary to take out State and federal export documents for each shipment; to wait until a national boat comes along which has cargo space; to pay heavy coastwise freight and landing dues when goods finally reach their destination; to pay custom-house brokerage and numerous stamps, as though the goods were entering from abroad; and, finally, to sustain all the exasperating and prejudicial delays these conditions occasion. These facts put sole agencies out of the question, unless their territory is limited to their respective business localities.

It is important that our merchants should pay strict attention to every detail, and that the consular invoice and the bills of lading should give accurate descriptions of goods covered by them. A point in instance is a shipment of lumber from the United States. The lumber had been measured and sold as clear lumber, allowance being made for split ends, defective pieces, etc., and the invoice and other papers were on that basis; but the lumber when measured by the custom-house here was taken at actual measurement, and was many hundred feet in excess of declared dimensions. Consequently, a fine was assessed on the whole which more than doubled the real duty, not counting the duty and fine assessed on worthless ends. If the exporter considered that the ends were not of sufficient value to be charged for, he should also have considered that they were not of sufficient value to pay freight upon, and should have studied the interests of his customer and have discarded worthless pieces in advance of embarkation.

A representative in the form of a good, live, wide-awake commission house is of value next to the visits of an equipped drummer; but I find it hard to get commission houses to undertake connections with new firms, and particularly our firms, which are not willing to give sufficient latitude for the proper introduction of new brands of goods, and want all expense to be at the cost of the introducer.

It is useless to send circulars, particularly those printed in English. Circulars in Portuguese are seldom read and those in English are put into the wastebasket.

Too much care can not be taken in making out invoices covering the contents of each package. The articles should be stated item by item, and opposite should be put the weight (gross and net) of each class of articles, together with price of same. Cases should be as large as possible to save lighterage and custom-house storage charges, and should be so nailed and bound that they can not be opened without detection. For this purpose, boxes should at least be wire or iron bound, and some foreign firms even go to the trouble of using a patent method of sealing or covering the cases with bagging.

EXPORT TAX.

The State continues to derive the greater part of its revenues from its export tax, which, in 1900, yielded 9,429,912.167 milreis ($1,980,281.55). A well-equipped tax department is maintained and inspectors are on all vessels to see that nothing embarks which has not already paid the tax.

The following table shows the receipts of the State from exports for the six months ended June 30, 1901:

Receipts of State for exports for first six months of 1901.

Article.	Quantity.	Duty.	Statistics.	Total.	
	Tons.	*Milreis.*	*Milreis.*	*Milreis.*	
Cocoanuts and coquilhos	79	433.900	173.560	607.460	$139.72
Cocoa	4,074	607,426.256	84,990.183	692,416.439	159,255.78
Coffee	2,790	114,317.919	22,863.584	137,181.503	31,551.75
Cigars, cigarettes, snuff, etc	5	56,267.024	11,253.405	67,520.429	15,529.70
Gold ore	(*)	27.280	27.280	54.560	12.55
Gold and silver, old	(†)	44.100	5.880	49,980	11.49
Hides and skins	924	114,534.567	16,362.093	130,896.660	30,106.23
Monazite sand	808	74,655.504	6,786.864	81,442.368	18,731.74
Piassava	749	73,009.787	6,637.252	79,647.039	18,317.82
Rubber	20	8,423.670	1,123.156	9,546.826	2,195.79
Stones, precious	(‡)	17,326.400	2,665.600	19,992.000	4,598.16
Sugar, crude	2,338	3,303.035	6,001.760	9,004.795	2,071.10
Tobacco, leaf	24,920	2,932,836.156	391,044.880	3,323.881.036	764,492.64
Woods	1,188	14,501.752	1,318.342	15,820.094	3,638.62
Other products	2,899	34,841.227	6,968.245	41,809.472	9,616.18
Total	42,927	4,051,648.577	558,322.084	4,609,970.661	1,060,269.27

*0.68 kilogram. † 4.2 kilograms ‡ 2 kilograms.

GENERAL TRANSPORTATION.

The greatest drawback to the proper exploitation of the rich natural resources, as well as to the agricultural advancement of this district, is the limited transportation facilities. Many of the most productive sections are dependent entirely on pack animals, which carry merchandise over trails often made impracticable in time of drought. There are several remote regions famous for the natural productiveness of their soil whose products have no commercial value, as they can not be brought to market. In three years' stay in this State, I have not seen anywhere a regular road extending 4 miles beyond city limits.

The city of Bahia has an estimated population of over 200,000, and all the produce consumed is brought in from the nearby farms on pack animals—small, spiritless stallions and mules or donkeys, sheep, and bulls. The only carts used are heavy, two-wheeled affairs drawn by one mule. The lack of transport facilities is the great drawback to this country's development.

Exports from Bahia for 1900.

Article.	United States.	Austria.	Belgium.	Chile.	England.
Amethysts ... packages					4
Cocoa ... bags	41,510	1,100	9,532		61,181
Coffee ... do	114,732	1,589	884	20	15,298
Copaiba oil ... barrels	14				
Coquilhos ... bags			690		1,161
Diamonds ... packages					3
Feathers, emu ... bales	19				
Gold and silver ... packages					1
Hair ... bales	11				11
Hides:					
Dry ... number	134,583				7,000
Salted ... do	7,000				
Honey ... packages					63
Manganese ... tons	11,496	2,000			4,911
Oakum ... bales					50
Piassava ... do	55		8,311		45,273
Rubber ... barrels	1,645				319
Rum ... pipes					25
Skins, goat and sheep ... bales	1,761				
Sugar ... bags	17,353				25,645
Resin (copal) ... barrels	50				1,039
Ticum ... cases			161		
Tobacco ... rolls			320		4,138
Tobacco ... bales			1,990	20	40,812
Whale oil ... barrels			414		3,194
Wood:					
Brazil ... logs	2,562				1,104
Rosewood ... do	2,255				1,428
Various ... do	400		330		

Article.	France.	Germany.	River Plata.	Total.
Amethysts ... packages		46		50
Cocoa ... bags	36,726	68,332	3,593	221,974
Coffee ... do	20,864	28,089	2,248	183,724
Cigars ... packages		5		5
Copaiba oil ... barrels				14
Coquilhos ... bags	2,229	732		4,812
Diamonds ... packages	4			7
Feathers, emu ... bales				19
Gold and silver ... packages	3			4
Hair ... bales				22
Hides:				
Dry ... number	19,251	53,852		214,686
Salted ... do	6,000	62,895		75,895
Honey ... packages		70		133
Horns ... bags	431	971		1,402
Manganese ... tons				18,407
Monazite sand ... bags		24,570		24,570
Oakum ... bales				50
Piassava ... do	111	8,595	421	62,766
Rubber ... barrels	14	227		2,205
Rum ... pipes		6		31
Skins, goat and sheep ... bales				1,761
Sugar ... bags				42,998
Resin (copal) ... barrels		1,695		2,784
Ticum ... cases		55		216
Tobacco ... rolls	1,500	6,736		12,694
Tobacco ... bales	119,500	241,163	9,768	305,703

Exports from Bahia for 1900—Continued.

Article.	France.	Germany.	River Plata.	Total.
Whalebone ... cases		473		473
Whale oil ... barrels		928		4,536
Wood:				
Brazil ... logs	1,222	597		5,485
Rosewood ... do	261	71		4,015
Various ... do	742	750		2,222

Exports for six months ended June 30, 1901.

Article.	United States.	Argentine Republic.	Austria.	France.	Germany.
Amethysts ... packages					4
Cocoa ... bags	20,853	3,527	200	17,165	13,501
Coffee ... do	26,552	1,560	175	5,204	10,247
Cigars ... packages					29
Copaiba oil ... barrels	22				25
Coquilhos ... bags				1,922	
Carbons ... packages				2	
Farina ... bags					40
Feathers, emu ... bales	8				
Gold and silver ... packages				1	
Hair ... bales	4				
Hides:					
Dry ... number	24,837		2,000	7,789	7,401
Salted ... do					25,201
Horns ... bags				168	475
Monazite sand ... do					13,334
Piassava ... bales		667			7,449
Resin (copal) ... barrels	33	3			467
Rubber ... do	442	97		20	99
Rum ... pipes					1
Skins, goat and sheep ... bales	561				
Sugar ... bags	84,450	200			2
Tapioca ... do				133	
Ticum ... cases					3
Tobacco ... rolls				400	3,029
bales		2,846		11,246	278,184
Whale oil ... barrels					245
Wood:					
Brazil ... logs	221			945	
Rosewood ... do	1,839			238	

Exports for six months ended June 30, 1901—Continued.

Article.	England.	Italy.	Portugal.	Total.
Amethysts ..... packages...				4
Cocoa ..... bags...	13,449	100		68,795
Coffee ..... do.....	3,063	18	4	46,823
Cigars ..... packages...			2	31
Copaiba oil ..... barrels...				47
Coquilhos ..... bags...				1,922
Carbons ..... packages...				2
Farina ..... bags...			721	761
Feathers, emu ..... bales...				8
Gold and silver ..... packages...				1
Hair ..... bales...				4
Hides:				
Dry ..... number...		6,000	65	48,092
Salted ..... do.....				25,201
Honey ..... packages...	6		1	7
Horns ..... bags...				643
Monazite sand ..... do.....				13,334
Piassava ..... bales...	17,621		1,352	27,089
Resin (copal) ..... barrels...				523
Rubber ..... do.....	31			689
Rum ..... pipes...	46			47
Skins, goat and sheep ..... bales...	27			583
Sugar ..... bags...	55,872			140,474
Tapioca ..... do.....			1	134
Ticum ..... cases...	10		83	96
Tobacco ..... rolls ...	1,395			4,824
bales...	56,006			348,283
Whalebone ..... cases...	24			24
Whale oil ..... barrels...	24			269
Wood:				
Brazil ..... logs...	580		226	1,972
Rosewood ..... do.....	980		321	3,378
Various ..... do.....			39	39

OPENING FOR RAILROAD MATERIAL IN RIO GRANDE DO SUL.

Under date of May 23, 1902, Minister C. P. Bryan, of Petropolis, transmits a report from Mr. Dawson, secretary of legation, regarding the equipment and material needed for the New Hamburg and Taquara Railroad. This road is 29.8 miles long, and traverses a fertile and thickly populated region hitherto without railroad facilities. The roadbed and right of way, including culverts but not the longer bridges, are practically ready for the rails. The material needed is as follows: For two bridges 21.8 yards long, overhead truss, 5.4 yards between supports; one bridge, undergirder 17.4 yards, 3.8 yards between supports; one bridge, undergirder 8.7 yards, 3.8 yards between supports; six undergirder bridges, one 6.5 yards, three 5.4 yards, and two 4.3 yards long; 1,960 tons of rails, 44 pounds per running meter (1.09 yards), and fish plates and screws for same;

spikes for 29.8 miles; 20 complete turn-outs or switches; two turntables; 102 pairs of wheels and appurtenances, axle boxes, springs, etc.; 10 complete trucks, American "bogie" system; 31 locomotives of 25 tons, for a maximum grade of 0.98 inch per meter (1.09 yards) and curve with radius of 109 yards, gauge 1.09 yards, to pull 120 tons, with a velocity of 24.8 miles maximum (native coal); four complete apparatus for telegraphic transmission, Morse system; six telephone instruments; telegraph wire for 29.8 miles. Bids for the foregoing material are being received and considered by Dr. Augusto Carlos Legendre, 22 A Rua Rosario, Porto Alegre. No time has been fixed for closing the bids, but the company is under contract to have cars running the fall of 1902. It is desired that the bids be for material laid down in Porto Alegre, not including duties. Freighting to Rio Grande must be in vessels not drawing more than 13 feet. From Rio Grande to Porto Alegre, freight goes in barges drawing from 8 to 8½ feet, and contracts can be made at $1.82 per ton. Bids have been received from German and Belgian firms. Mr. Dawson adds:

There is more railroad building now going on and in contemplation in Rio Grande than in any other State of Brazil, and all the mileage in existence is under Belgian or English management and control. The native coal mentioned as the fuel to be used by the locomotives is a sort of lignite, and is of low calorific value.

CHILEAN NITRATE ASSOCIATION.

Practically all of the nitrate supply of the world comes from Chile. This immense industry is under the control of a unique commercial organization known as the Nitrate Association, which, in March, 1901, was formed for the purpose of limiting the output, maintaining prices, and disposing of the product through one general agency.

The association has recently issued a report, from which it appears that the exports in 1901 amounted to 2,738,523 tons, leaving stocks of 627,493 tons. There were also some 1,909,448 tons afloat.

The association takes a gloomy view of the future of the nitrate industry, alleging that the erection of new works will bring about an increased production, and may, through a readjustment of quotas, result in a dissolution of the association.

In November of last year, thirty-two lots of nitrate properties were offered for sale at auction by the Government, twenty-eight of which found purchasers. There was realized from the sale 2,447,671 pesos ($893,399). Out of this sale there have sprung up a number of new works, and eighteen are to be added to the seventy-seven now in the combination. The Government is preparing to place upon the market another lot of twenty-one nitrate properties, which will probably result in the building of other works. With these the productive power will be greatly increased, and fears are entertained by the association that its present prosperity will be of short duration. On the other hand, the new companies claim that producers are reaping enormous profits from the business.

R. E. MANSFIELD,
VALPARAISO, *May 22, 1902.* *Consul.*

SUGAR IN PERU.

Under date of June 20, 1902, Minister I. B. Dudley, of Lima, says:

Business conditions in Peru to-day are in unfavorable contrast with those of a year ago. The general prosperity of the country may be fairly said to vary with that of the sugar producer. It is true that new channels of investment are being opened and put to account, by reason of which this dependence may rapidly lessen; but the bulk of the capital—certainly 40 per cent—is invested in the plantations of cane which occupy the irrigated valleys of the coast. In consequence of the decline in the price of sugar during the last year, the industry has suffered most severely, and with it all the allied or dependent interests. On all plantations the number of laborers has been greatly reduced.

The annual export of sugar is approximately 120,000 tons. In 1899, sugar sold for $2.68 per cwt. f. o. b.; to-day it sells for $1.40. Prior to the fall in price, this exportation at the average price of $2.43 per cwt. produced $5,844,000; to-day that income is reduced to $3,300,300. A commission was appointed a few days ago "to investigate and report to the Executive on measures calculated to relieve the difficult situation of the sugar industry."

IMMIGRATION INTO PERU.

Under date of May 8, 1902, the Department has received from Minister I. B. Dudley, of Lima, copy of a pamphlet issued by the Peruvian Ministry of Public Works, the purpose of which is to attract immigration to develop the public lands in the interior, especially those along the central route from Lima to Iquitos. The guide contains information regarding the legal status of foreigners, mining and rubber laws, opportunities in Peru, etc., and the following extracts have been made:

> The immigrant enjoys the same civil rights as the native Peruvian. He may become the proprietor of mountain or forest lands conformably to the law of 1898, which establishes the methods of acquisition by purchase, by concession, by contract of colonization, and by free adjudication. Coast lands can be acquired on condition of irrigating them, conformably to the law of 1893. In order to encourage immigration, the Government offers the colonist all kinds of exemption from taxes. Wages are more remunerative in Peru than in the neighboring countries, on account of the scarcity of labor. A field hand gets from 34 to 58 cents per day; mechanics, carpenters, and blacksmiths, according to competition, from 97 cents to $1.95 per day. The district offering the greatest advantages to immigration is that which the central road traverses, from San Luis de Shuaro to Iquitos. The natural products are gums and building woods. The soil readily lends itself to the cultivation of coffee, cacao, and sugar cane, and, on account of the inequalities of surface and of the variety of the climate, all the fruits of the cold, temperate, and tropical countries may be produced. Peru is essentially a mining country. Silver and copper are mined on a vast scale. There are also rich deposits of salt, naphtha, coal, petroleum, mineral waters, and borax. The number of mining claims registered were:
>
> | | Number. |
> |---|---|
> | 1899 | 1,107 |
> | 1900 | 1,663 |
> | 1901 | 1,014 |
> | 1902 (first semester) | 532 |
>
> As regards means of communication, aside from her water ways and highroads, Peru has eleven broad-gauge railways, with a total length of 1,386 kilometers (861 miles), and seven narrow-gauge roads of 204 kilometers (126.7 miles) now in operation.

OPENING OF EASTERN BOLIVIA AND PERU.

Recent journeys in the States of Para and Amazonas and acquaintance with eminent geographers and civil engineers who have spent years in exploring eastern Bolivia and Peru and the Amazon River system enable me to furnish some information which may be of interest to our people, now that American enterprise seems willing to participate in the important work of establishing closer relations with this vast and rich territory.

In speaking of the great Amazon basin Alexander von Humboldt said: "Here, sooner or later, the world's civilization will be concentrated." The economic and industrial conditions in the United States strongly point to the necessity of commercial expansion, and there is hardly a better field for it than in the country tributary to the Amazon—right before our door, as it were.

The natural highways of eastern Bolivia and eastern Peru are the navigable rivers eastward to the Atlantic—the Madre de Dios and Purus and the Beni, Mamore, and Madeira, tributaries to the Amazon.

By building a canal uniting the Madre de Dios with the Acre (Aquiry) River, an uninterrupted water way could be established between that part of eastern Peru in which lie the settlements of Cuzco, Urcos, and Quiquijama—a country well known for its rich mineral and agricultural resources—and the mouth of the Amazon and Para rivers.

A Brazilian explorer (Alexander Haag), who was for several years chairman of an official commission charged with investigating the feasibility of the above-mentioned canal, assured me this very important improvement could be made at an expense of about $150,000.

Another strategic point of great importance in this river system is the Madeira Falls, which are the only obstacle to navigation between the Atlantic coast and the largest and richest part of the Bolivian Republic. Efforts heretofore made to do away with this obstruction or to get around it have proven inadequate or impracticable. An expert report published in 1869 demonstrated that, by improving the channel along the rapids and falls and by constructing a series of locks and small canals, uninterrupted navigation could be established. The cost of this undertaking was estimated at 900 contos of reis, which would be, at the present rate of exchange and increase of prices, about 2,000 contos, or $500,000. The engineers reported against the building of a railroad on account of topographical difficulties.

A few years later, Col. George Earl Church, a well-known civil engineer of New York, advocated the construction of a railroad around the Madeira Falls, and, backed first by British and then by American capital, work was prosecuted for a time, but it had to be abandoned on account of the lack of funds and the great mortality among the laborers.

Dr. Souto Maior, professor of geography in the National University of Rio (who studied for six years in the United States), has secured from the Brazilian Government, for a period of twenty-five years, the exclusive control of navigation on the Madeira, from Santo Antonio to the mouth of the Beni River, with the privilege of levying toll, etc. He is anxious to have the canal improvements made, and has requested me to lay this matter before American engineers and capitalists, with whom he would like to cooperate. He believes it probable that a reasonable interest guaranty on the capital invested, or subsidies and various desirable privileges, could be obtained from the Brazilian and Bolivian Governments.

Navigation on the Amazon is free up to Tabatinga (the Brazilian town on the Peruvian border) and on its affluent, the Madeira, up to the first of the falls (Santo Antonio); from there to the Bolivian frontier, Dr. Souto Maior has exclusive control, and in Bolivia navigation is unrestricted everywhere. From this it is evident that Dr. Souto Maior controls a strategic position of great importance in the foreign trade of Bolivia.

I transmit herewith a sketch of the Madeira River and falls,* and I can easily procure all the details desired by parties taking an interest in this matter.

To the Madeira River system the following navigable streams belong: The Mamore River (with its principal affluents, Chapore, Guapahy, and Sicuri), connecting the Bolivian provinces of Chicasaca, Cochabamba, Santa Cruz, and Beni with the Amazon; the Beni River, connecting the La Paz region with the same water way; the Madre de Dios River, connecting the north of Bolivia and the city of Cuzco, in Peru, with the Madeira River; the Guapore, which constitutes the eastern boundary of Bolivia and connects the Matto Grosso region of Brazil (and the Paraguay River system) with the Amazon. These four affluents of the Madeira present opportunity for uninterrupted navigation (by means of steam launches of from 30 to 50 tons burden) of more than 5,000 kilometers (3,107 miles), in a territory that has about 1,800,000 inhabitants and commands a very considerable trade, in spite of its isolation and primitive conditions.

The following are some of the distances in the navigation of the Maderia River system:

From and to—	Distance.	
	Kilometers.	*Miles.*
From the Santo Antonio Falls to the mouth of the Beni	357	221.8
From the Santo Antonio Falls to the Guapore Mirim (the last of the six falls and rapids on the Bolivian border)	425	264
From the Santo Antonio to the mouth of the Madeira	901	559.8
From the Santo Antonio to Manaos	1,141	709
From the Santo Antonio to the city of Para (Belem)	2,400	1,491.3
From the Santo Antonio to Exaltacion (center of Bolivia)	1,024	636.3
From the mouth of the Beni to Huachi (Bolivia)	1,500	932
From the town of Matto Grosso to the mouth of the Madeira (via Guapore)	2,000	1,242.8
From the Guajara Mirim Fall to Guapahy (Bolivia)	1,500	932

The following table shows the distances from Santo Antonio to the several falls of the Maderia River; also the length of navigable channels between the different cataracts:

Falls on rapids of the Madeira.	Distance from Santo Antonio.		Length of navigable channels between the different falls.	
Santo Antonio Falls to—	*Kilometers.*	*Miles.*	*Kilometers.*	*Miles.*
Salto Theotonio	11	6.8	11	6.8
Caldeiras de Inferno	112	69.6	101	62.7
Girao	126	78.2	12	7.4
Paredao	207	128.6	79	49
Pederneiras	230	142.9	29	18
Araras	306	190	76	47.2
Ribeirão	332	206.3	26	16.1
Madeira	357	221.8	20	12.4

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* Filed in the Bureau of Foreign Commerce, where it may be consulted by parties interested.

On the Bolivian side there are six more rapids and falls within a distance of 67 kilometers (41.6 miles).

The principal products of the parts of Bolivia and Peru affected by the project of direct connection with the Atlantic Ocean are rubber, cacao, nuts, quinine, wheat, corn, coffee, cotton, sugar, grapes, leather, meat products, and minerals, such as gold, silver, copper, and lead.

Live stock which costs in eastern Bolivia 5 bolivianos* ($2.04) a head could be readily sold at 200 to 250 bolivianos ($81.60 to $102) a head in the rubber districts on the Acre, Upper Madeira, and Upper Purus.

The quantity of timber and the variety of valuable cabinet woods in those regions are extraordinary. The Madeira and Beni rivers take their names from the rich forests along their shores.

The possibilities of the import trade in the territories along the Upper Amazonas, the Madeira, Purus, Acre, Beni, Mamore, and Guapore, in eastern Bolivia and eastern Peru, may be said to be unlimited when markets are opened for their products.

The only drawback to opening up this large and rich section of South America to the commerce of the world lies in the sanitary condition of some of the districts through which the above-described water ways lead. The following remarks on this subject are based partly on personal observation, partly on the opinion of experts who are identified with the exploration of the Amazon River system and the adjacent territories.

The sanitary conditions of the Amazon up to Tabatinga, of the Madeira up to the falls, of the Rio Negro, and of the Lower Japura are about the same as those of the Lower Mississippi during the summer season. The conditions in the highlands of Bolivia and Peru are very favorable.

The unhealthy region of that territory is in the vicinity of the falls of the Madeira and Beni and on the Lower Purus and Acre, where numerous basins exist which, during the rainy season, are filled with water. This water has no outlet, and, exposed to the rays of the tropical sun, soon becomes stagnant and breeds the microbes of malaria and beriberi and swarms of mosquitos, which introduce them into the human system.

The mortality among the rubber cutters of this region is enormous; but it must be taken into consideration that the majority of these people come from the regions of Ceara and Maranhão, have very low vitality, are irregular in habits, profoundly ignorant, and too poor to fortify themselves against the climatic dangers to which they are exposed. Those who control labor on a large scale in the lowlands of Brazil and Bolivia could greatly reduce the mortality of their men by complying with the following requirements: To provide for a good commissary department, comprising, among other things, plenty of preserved vegetables, tea or yerba maté (Paraguayan tea); to furnish the men with good tents, mosquito bars, and protection of hands and head against mosquito bites; to let nobody sleep lower than 30 feet from the ground; to provide water boilers and filters, and, in particularly exposed localities, to give the men quinine and tincture of arsenic; to permit the use of spirituous liquors only in exceptional cases; to have a good physician along and enforce the strictest discipline. If these hygienic measures were observed in the rubber camps, on board of the river steamers, and during the construction of railroads and canals in swampy regions of the Tropics, many lives could annually be saved.

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* 1 boliviano=40.8 cents.

The foregoing, however, was not written to recommend the exploration of the tropical swamps of Brazil or Bolivia, but to call attention to the facility with which the great and rich territories of eastern Bolivia and eastern Peru can be opened up to the commerce of the world.

This proposition seems to be of sufficient importance to merit the attention of our captains of industry and finance.

EUGENE SEEGER,
Consul-General.

RIO DE JANEIRO, *May 15, 1902.*

VENEZUELAN RAILWAY PROJECT.

Consul E. H. Plumacher writes from Maracaibo, June 5, 1902, in regard to a proposed railway from Maracaibo to Perija. A concession for this line was granted in 1895,* but it has lapsed, and a new one has been granted. The consul says:

The district of Perija lies southwest of Maracaibo and is divided from Colombia by a spur of the Cordilleras. This mountain range is heavily timbered with valuable trees; the climate here is healthy and suited to the white race. The country is most productive; coffee, cacao, indigo, cotton, and corn grow readily. Its tobacco is famous. The land is well adapted for cattle raising, and diseases of live stock are unknown. Copper, iron, and coal are found, as well as gold and precious stones. There are deposits of asphalt and petroleum. Land producing the finest tobacco can be obtained for 20 cents an acre. Lack of communication is the main obstacle to the development of the country. The timber, which is shipped to Europe, can be brought to the coast only by means of freshets in the streams.

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*See CONSULAR REPORTS No. 176.

A summary of the terms of the concession is given below:*

The line is to be a single track, with distance between rails of 1.07 meters (42.13 inches) and a minimum radius of curves of 60 meters (196.8 feet). Work must be commenced within twelve months after the signing of the contract and the road completed and open for traffic within another twelve months. At the station of San Ignacio, the road may divide, one branch going to the north, passing through the town of Rosario, and the other to the south, through Machiques. The general plan of the line and branches shall be presented to the Government for approval. The concessionnaire shall also establish a steamship line between Barranquita and Maracaibo. The grant is for ninety-nine years, counting from the date on which the road is open to service; at the expiration of that time, the railway, with its rolling stock, warehouses, and offices, shall become national property. The Government also reserves the right to buy the road. Mails are to be carried free. Government troops and baggage, as also public employees on service, are to be transported for one-half of the tariff rate. This concession is not transferable without the previous consent of the National Executive. As a guaranty, the company shall deposit 50,000 bolivars ($9,650) in the bank of Maracaibo three months after the approval of the contract. This deposit can be withdrawn as soon as a section of 20 kilometers (12.4 miles) shall be completed; otherwise, if the works of construction and continuation are not performed within the specified time, it is forfeited. The following franchises and privileges are granted the company: The expropriation of private lands needed for the lines, switches, offices, warehouses, and stores, to be ordered by the Government and paid for by the concessionnaire; to take up, subject to no indemnification, public lands, woods, and water ways needed for the construction of the line; the introduction of materials, machinery, tools, instruments, during the period of exclusive privileges, free of all custom-house duties and impost, excepting the stamp tax, subject to the dispositions contained in the finance code and other laws on the subject; the transshipment of materials at Maracaibo; the construction of wharves on the lake; and the preference in the acquirement of all mines or quarries found on the track of said line by fulfilling the legal formalities. Besides the property right to the public lands occupied by the line for necessary works, the Government concedes to the company the property right to alternating strips of land 1,000 meters (1,090 yards) in length by 500 meters (545 yards) in depth; and also the authorization to introduce foreign immigrants with the purpose of populating the lands near the lines, as well as other lands in the Perija district. For this purpose, the concessionnaire shall obtain gratis portions of lands of 500 hectares (1,235.5 acres) each for agricultural purposes and 2 leagues for breeding purposes. These rights are subject to the immigration law of August 26, 1894, now in force.

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*The full text of the concession, together with a list of the woods found in the district, has been filed in the Bureau of Foreign Commerce, where it may be consulted by persons interested.

LAND CONCESSIONS IN HONDURAS.

Consul W. E. Alger writes from Puerto Cortez, July 1, 1902:

By every mail, I receive letters asking for information as to the possibility of renting land from the Government. A recent decree, of which the following is a translation, replies to all such inquiries, and should be of interest to all Americans who may be desirous of entering into agricultural pursuits in Honduras:

DECREE NO. 50.

ARTICLE 1. The executive power will cause to be measured all national lands in the district of Tela, and all which may be included in paragraph 1 of article 30* of the law of agriculture, with the exception of those on which there may be ruins of ancient populations, into lots of 25.50 and 100 hectares† each, with their respective plans.

ART. 2. Each lot will have a number or name, and boundaries will be duly marked.

ART. 3. The usufruct of said lots can be acquired by Honduraneans, or by foreigners domiciled in, or who intend to be domiciled in, the country, without any expense and without other formality than a simple written request made by the interested party to the collector or subcollector of the respective customs, or before such office as the Government may designate.

ART. 4. The acquisition of which this treats will give personal title, and with the exception of one's heirs, can be transferred only when one-fourth of same is under cultivation.

ART. 5. If any person asks for more than one lot, he must make petition to the Minister of Fomento, who, taking into consideration the resources of the interested party, can concede or deny. The executive power, on conceding more than one lot, can not give title to a larger number of lots than would cover 500 hectares (1,235 acres). These lots will be registered in the same way as the others.

ART. 6. These lots are destined by preference to agricultural purposes, and cultivation must be begun inside of two years from date of concession.

ART. 7. The lessee of each lot will pay an annual rent of 25 cents (10 cents in United States currency) for each hectare (2.471 acres), payment to be made in advance from January 1 to December 31; but if a concession is obtained after the first of a year, the tax will be in proportion to the time necessary to complete the year, which concludes December 31. Once cultivation has been established, the annual tax will be reduced to 10 cents (4 cents) for each hectare under cultivation. This tax can not be increased during the next twenty-five years.

ART. 8. The lessee, or his successor, will forfeit his rights if he does not begin cultivation of the lot or lots given inside of two years from date of concession, also if the tax mentioned in the foregoing article is not paid when due; but in this case, if a quarter part of the lot is under cultivation, he will only forfeit the uncultivated part, the Government having the right to collect taxes on the part under cultivation.

ART. 9. At any time in which it may be necessary to occupy one or more lots, or parts of same, for roads, railroads, wharves, landings, for navigation or canalization, bridges, or other works of public benefit or necessity, the lease will stop, and the lessee will be paid the value of the improvements on the portion needed, value of same to be fixed by arbitration.

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*Paragraph 1, article 30, law of agriculture: "All lands belonging to the nation which are within 8 kilometers (4.9 miles) from the sea or from Carataska or Brewers Lagoon, and all islands."

†1 hectare=2.471 acres.

ART. 10. The lessees of said lots will enjoy, from the moment they begin to cultivate the same, the privileges and exemptions established by the law of agriculture.

ART. 11. In the division of lots, there are excepted the lands adjacent to the ports, towns, and districts which in the opinion of the Government may be necessary for the future increase of said places and for the establishment of wharves, landings, and places of deposit. The space which separates the lots remains destined to common use.

ART. 12. This law does not affect in any manner any prior contracts or concessions.

ART. 13. The executive power will issue regulations for the application of the present law.

ART. 14. The law will take effect from the date of promulgation.

Transitory dispositions.

People who without legal title may be in possession of lands included in zones referred to by article 1 should present themselves before the respective authority within six months from the date on which this law takes effect and obtain title, being subject in such case to all the obligations of the same. Persons who have a valid title to lands included in aforesaid zones are not subject to the obligations established by the present decree.

Given in Tegucigalpa the 22d day of February, 1902.

REGISTRY OF LAND TITLES IN NICARAGUA.

Consul C. V. Herdliska sends from San Juan del Norte, July 3, 1902, translation of a recent decree as to registry of land titles in the district of San Juan del Norte. He adds:

It is manifestly to the interest of all American citizens owning property here, as well as intending purchasers or settlers (concessionnaires for usufruct of land), to study the terms and requirements of the new law for registry of land titles.

This decree, promulgated at Managua on March 20, 1902, by President Zelaya, was published in June in San Juan del Norte. It affects property holders, both native and foreign, in the district of San Juan del Norte, from the right bank of the River Punta Gorda to the Costa Rican frontier; native landowners having a term of six months from date of promulgation to comply with its requirements, which term is extended to one year in the case of owners resident abroad. Briefly, the requirements are these:

All property holders must within the stated time present to the governor at San Juan del Norte their original titles, declaring at the same time the value of the said property, which shall then be recorded both in the books of the district and on the face of the title itself. There shall also be recorded, together with the name of the actual possessor, the names of all former owners, and various descriptive details; and no title shall be recognized unless it be derived in lawful succession, by right of purchase, gift, or assignment, from a title originally issued by the Nicaraguan Government or its agents, or from a title certified to by the joint commission (British and Nicaraguan) which in former days administered the affairs of the Mosquito Indian reservation, of which San Juan del Norte formed part. These are the "titulos de enagenacion Mosquita" of the text of the decree.

A Government surveyor shall at the close of the term allowed for registry, or sooner if all titles are sooner recorded, make a survey of all property in the district. This survey is to be at owner's cost; and owners shall be compelled, under penalty, to build landmarks of stone and cement at each angle of the land, the more clearly to define the boundaries.

Those who fail to present their titles within the stipulated term will, by the act, forfeit to the State their right of ownership.

Owners of country or rural property are to submit, in addition, a map of their lands, and to show what proportion thereof they have actually under cultivation. Failure to comply with this will incur a fine.

The act, naturally, can not be subversive of the older laws as to twenty years of "squatter's right," *i. e.*, actual residence upon a piece of land constituting ownership; but all who own land in this way should at least have proper record made of their claim within the term specified.

The Nicaraguan Government may lawfully at any time appropriate to its own use all lands within 1 mile of a river. This is the old "milla maritima" law. But in all such cases the Government is bound to compensate owners for any improvements upon lands so reverting to it.

The decree reads:

THE PRESIDENT OF THE REPUBLIC.

Now, whereas, in the interest of good fiscal administration and for the guaranty of private property, it is necessary to formulate rules which shall determine clearly the boundaries of every parcel of land; and for the purpose of avoiding the complications attendant upon transfers;

And, whereas, in the district of San Juan del Norte and on account of the peculiar nature of land tenure there, there are no recognized and determinate boundaries—for though there is a plan showing the tracts of land situate within the district, this plan does not indicate the landmarks which limit the claims of each landowner, and is therefore productive of confusion in the processes of transferring property; and because to obviate these difficulties it is necessary to have a general demarcation.

Now, therefore, by virtue of the administrative powers in him vested by the constitution [the President] doth decree:

ARTICLE 1. All proprietors of town or country real estate situate in the district of San Juan del Norte, from the right bank of the River Punta Gorda to the boundary line or frontier of the Republic of Costa Rica, shall, within six months of the publication of this decree, present to the governor of the city (of San Juan del Norte) their titles in the original; and they shall declare before the said functionary the price at which they value the property aforesaid, that, firstly, the same may be recorded in a book provided for this purpose; and, secondly, that the same may be recorded upon the face of the title itself.

ART. 2. The governor of San Juan del Norte shall keep the record of titles in a book which he shall sign, upon every page, before making any entry therein; and upon the first page he shall state how many leaves the book contains in all; and in this book he shall record as follows:

(1) The date—day, month, and year—in which the entry is made.

(2) The date upon which such title shall have been transferred, the name and surname of him who makes the transfer, and the name and surname of the transferee.

(3) Whether or not such title be of Mosquito (Indian) origin; or whether a transfer to the owner by the (Nicaraguan) Government or its agents.

(4) Whether it be in all points perfectly legal, and whether the various past owners have duly paid all taxes with regularity, and who those may be who still owe taxes to the public revenue and what the amounts thereof may be.

(5) Names of the various owners who have by bequest or gift or assignment transferred such title in the past.

(6) Size of the parcel of land as stated upon the face of the title deed.

(7) The street upon which the parcel of land is situate; and, if in the city (limits), whether it have buildings upon it or not.

(8) If in the country, whether the parcel of land be under cultivation or not, and what sort of crop it bears.

ART. 3. No deeds except such as are based upon Mosquito (Indian) titles or have been transferred to the owners by the (Nicaraguan) Government or its agents shall constitute a valid title; and the present holders of land under such deeds shall be, as aforesaid, considered not as owners but as tenants, and shall pay such rental as the Government may establish or have already established.

ART. 4. When the register of titles shall have been completed or when the time fixed by article 1 shall have elapsed, the governor shall cause the lots to be remeasured by an engineer whom the Government shall appoint. The engineer, in his work of remeasuring, shall begin at the eastern end of the city, taking for his starting point the first lot set down upon the plan of the city, and shall have before him the title of the piece of property whose boundaries he is trying to establish, as well as the titles to those adjoining the same; and he shall record the dimensions of the tract of land, as established by him, for later confrontation with the register kept in the Gobernacion (City Hall). The expense of such remeasurement shall be borne by the owner, his agents, or representatives.

ART. 5. Every landowner, once the demarcation has been made by the surveyor (engineer), shall place landmarks of stone and mortar at each angle (of his parcel of land), and upon these the engineer shall mark in linear feet the length of the boundaries, north and south and east and west. Neglect in complying with this provision shall subject the owner to a fine of 15 pesos* ($5.73) for every fifteen days delay, which fine shall be appropriated to public works by the governor.

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*The United States Mint valuation of the Central American peso, July 1, 1902, was 38.2 cents.

ART. 6. Those who do not, within the time prescribed by this law, present their titles shall lose all right of ownership to the benefit of the State, excepting solely such as reside in foreign lands, to whom another additional six months are granted in which to present their titles for registry.

ART. 7. In the same manner, owners of rural property within the district mentioned in article 1 of this law shall submit to the governor their property titles and also a map of their property; and the governor shall register the same, noting the number of "manzanas" of superficial area, what proportion of the land is under cultivation and what proportion is not, and stating whether the landmarks have been placed as provided by the agrarian law. Failure to present the documents called for in this article shall subject the owner to a fine of 20 pesos ($7.64) for every month's delay, and such moneys shall be applied to highways.

ART. 8. Those who do not present titles of property during the space of time exacted by articles 1 and 6 of this law shall not be recognized as owners, and their property shall become that of the nation.

ART. 9. The governor shall charge for the registry of each title 2½ pesos (95 cents), and shall indicate at the foot of each its date of registration.

This law shall take effect from the date of publication.

MANAGUA, *March 20, 1902.*

FREE IMPORTS INTO YUCATAN.

The Mexican Congress has passed an act amending the executive decree which will expire on June 30 next,* by which certain articles of necessity imported into part of the Peninsula of Yucatan were exempted from customs and other duties. According to said decree, these articles had to be imported through the port of Chetumal on the east coast of the State of Yucatan, and could not be sent beyond the limits of a certain zone. This zone comprised the country formerly occupied by a rebellious tribe of the Maya Indians, who did not recognize the Mexican Government. Some time ago, the Federal Government decided to subdue these Indians by an active military campaign, and is now in possession of almost the whole territory. Although this district was a part of the State of Yucatan, the Federal Government created a national territory under the name of "Quintana Roo."

The act of Congress above mentioned provides that the exempted articles can be imported through any of the seaports of the territory instead of through Chetumal solely. Entry of such articles at the custom-houses, and the forwarding of the same into the interior of the territory, will be subject to the same rules as for any other kind of merchandise; and if such articles are found beyond the limits of the territory, they will be seized as contraband and the party responsible punished according to law.

The following is a list of the articles to be exempted from the regular and additional duties, port dues, and the 7 per cent interior or revenue-stamp tax. The number opposite each article corresponds to that in the tariff of customs duties now in force:

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*See ADVANCE SHEETS No. 1125; CONSULAR REPORTS No. 253 (October, 1901).

4. Hogs and young pigs.
5. Neat cattle and their young.
6. Goats and sheep.
8. Donkeys.
9. Sucklings of the stock specified.
10. Fresh beef, mutton, pork, and fowls.
11. Fresh fish, even preserved in ice.
12. Smoked and salted meat.
13. Salt, smoked, dried, or pickled fish and shellfish.
41. Sausage of all kinds, and ham in salt.
42. Preserved meats, fish, oysters, lobsters, etc.
45. Condensed milk.
46. Hog's lard.
47. Butter.
49. Cheese of all kinds.
64. Cod-liver oil in glass bottles.
64*a*. Cod-liver oil in tin cans or wooden vessels.
76. Harness of all kinds, for wagon or carriage teams.
91, 92, and 93. Ladies' boots, made of leather or cloth, of all kinds, not containing fine metal.
99, 100, and 101. Shoes, made of leather or cloth, of all kinds, not containing fine metal.
122. Stearin candles.
123. Tallow candles or tapers, whether pressed or not.
135. Coffee, raw.
140. Fruits in their juice, in sirup, or in alcohol.
141. Fresh fruits, vegetables, and tubercules, not specified.
142. Fruits, vegetables, and tubercules, not specified, preserved.
143. Corn.
144. Pepper.
145. Seeds and alimentary grains, not specified.
146. Wheat and other cereals, not specified.
148. Medicinal seeds and berries.
148*a*. Medicinal seeds and berries, pulverized, scraped, or in cakes.
164. Roots, barks, flowers, herbs, and other medicinal leaves.
164*a*. Roots, barks, flowers, and other medicinal leaves, pulverized, scraped, or in cakes.
168. Olive oil in jars or in tin cans.
169. Olive oil in glass bottles.
170. Common and refined sugar.
170*a*. Coffee, whether ground or not.
174. Crackers of all kinds.
175. Flour of wheat and other cereals.
177. Alimentary pastes of flour.
179. Camphor.
189. Starch.
202. Ordinary lumber for building purposes, cut in boards or planks, tongued and grooved; furniture of common wood, roughly made.
311. Iron wire for fences.
313. Plows and plowshares.

319. Agricultural implements, such as picks, shovels, axes, ordinary machetes, etc.

340. Nails, tacks, screws, bolts, and rivets of iron or steel and the brace rods of iron or steel for constructions.

359. Common and hydraulic lime, Roman and Portland cement.

378. Oil, mineral, impure.

379. Oil, mineral, refined.

387. Adobes (sun-dried bricks).

400. Bricks and paving blocks of clay.

415. Tiles and pipes for ventilation and drainage, of clay.

455. Cotton handkerchiefs, neither cut nor hemmed.

456. Cotton handkerchiefs, cut or hemmed.

458. Cotton stuffs, crude or unbleached, of plain texture, of not more than 30 threads of warp and woof in a square of 5 millimeters (0.19 inch) per side.

459. Cotton stuff, crude or unbleached, of plain texture, of more than 30 threads of warp and woof in a square of 5 millimeters (0.19 inch) per side.

460 and 461. Cotton goods, painted, stamped, or dyed, of plain texture.

469. Fabrics or articles of cotton netting, not specified, with or without small ornaments of any substance, not fine metal.

472. Drawers made of cotton for men and boys.

473. Cotton shirts, under and outer, for men and boys, even if they contain small ornaments of wool or silk.

492. Ready-made clothing not specified, and its loose parts when sewed, made of cotton of all kinds and textures, with or without trimmings of lace or embroidered with trimmings of cotton or linen, silk ribbons, or ordinary metal, for grown people and children.

508. Cloth made of jute, ixtle, abaca, pita, henequen, New Zealand fiber (*Phormium tenax*), or hemp, whether white, dark, or colored, of all kinds of textures, containing not over 32 threads of warp and woof in a square of 2 centimeters (0.78 inch) per side and not weighing over 400 grams (14.1 ounces) the square meter (1.196 square yards).

661. Natural alkaloids, not specified, and their salts.

665. Antiseptic cotton.

666. Liquid or concrete ammonia.

673. Medicine chests.

675. Medicinal capsules, pearls, globules, lozenges, granules, pills, and comfits and the empty capsules of gelatin or wafers.

676. Bicarbonate of potash or soda.

682. Chloroform.

689. Medicinal drugs and chemical and pharmaceutical products not specified.

695. Matches and tapers of all kinds.

701. Morphine and its salts.

705. Pastes, lozenges, and medicinal jellies.

706. Pepsin.

707. Permanganate of potash.

709. Medicinal compound powders.

711. Quinine and other alkaloids of cinchona.

712. Common or table salt.

715. Salts and oxides of all substances not specified.

728. Medicinal wines, whether patented or not.

729. Iodine.

730. Iodoform.

793. Tools of all kinds and material for workmen.

800. Steam engines and their extra pieces.

801. Machinery and apparatus for any kind of use or object and their loose parts, when not arranged to be moved by crank, pedal, or lever.

802. Machinery and apparatus and their loose parts for industry, agriculture, mining, and the arts, when arranged to be moved by cranks, pedal, or lever.

815. Wagons, trucks, and carts, without springs, for carrying freight.

899. Soap without perfume.

WM. W. CANADA,
Consul.

VERACRUZ, *June 24, 1902.*

PRIZE FOR ARTESIAN WELL IN MEXICO.

I give below translation of a proclamation issued by the acting governor of the State of Oxaca, Mexico, under date of July 3, 1902:

DECREE.

ARTICLE 1. A prize of $5,000 in Mexican currency* will be granted to the person or company that, within three years from the date of this decree, shall drill and put into working order an artesian well in the city of Oaxaca or in the towns of Xochimilco and San Felipe del Agua and Hacienda de Aguilera.

ART. 2. Exemption from all local taxes will be granted to those who undertake the work, established or to be established, on capital invested for said object, from the date of commencing work and for the period of ten years after, if results are successful. During the period of operations, the company or persons engaged in said work, as also all employees, will be exempt from all personal taxes.

ART. 3. The property, possession of same, and use of the artesian well will belong exclusively to the company or persons to whom the concession is granted, who will enjoy the privileges allowed by the franchise to all those engaged in public works.

ART. 4. In order to obtain the concession under the present decree, a written application must be made to the governor; and upon obtaining the concession, a written notification must be made to the governor that work is to be commenced, and upon suspension of work a written notice must be given whether it is stopped temporarily or finally, in case of failure or success.

ANDREW D. BARLOW,
Consul-General.

MEXICO CITY, *July 17, 1902.*

LEGALIZING FOREIGN SHARES AND BONDS IN MEXICO.

Consul W. W. Canada transmits from Veracruz, June 5, 1902, an abstract of a recent law amending the requirements for legalizing in the Republic bonds and shares of stock issued in foreign countries, as follows:

Bonds and shares of stock issued in a foreign country by societies, companies, or corporations established in this Republic must be issued according to the following rules to be legal:

I. The charter or articles of corporation authorizing their issue must be according to the laws of the country where issued.

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*About $2,075, according to the valuation of the United States Mint, July 1, 1902.

II. The issue of such bonds or shares must be made in accordance with the laws of the country where issued.

III. The Mexican ambassador or minister, or, where there is none, the Mexican consul, must certify that the requirements mentioned in the foregoing articles have been complied with.

IV. The charter or articles of corporation authorizing the issue of the bonds of shares of stock must be recorded in the records of a notary public in the Republic of Mexico, and a certified copy of said record must then be inscribed in the public register of commerce, as directed by Article XIV of section 21 of the code of commerce.

V. Should the shares, bonds, or stock be guaranteed by mortgage, said mortgage must be placed on record according to the laws of the State, federal district, or territory in which the property is located.

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SECTION 19. The duties and rights resulting from or growing out of the charter or articles of corporation shall be governed by the laws of the place where executed, provided said laws do not conflict with the laws of Mexico on the subject, although the charter or articles of corporation may be in operation wholly or in part in the Republic of Mexico; unless it is expressly stated in the charter or articles of corporation that they shall be governed by the laws of Mexico. Shares, bonds, or stock guaranteed by real estate located in the Republic of Mexico shall be governed wholly by Mexican laws, so far as the guaranty of the mortgage is concerned.

SECTION 20. The Mexican tribunals shall in all cases have jurisdiction to decide any question, dispute, or contest arising in regard to the rights or duties of such charters, agreements, contracts, articles of corporation, etc.

CURRENCY IN THE YUKON.

Consul H. D. Saylor reports from Dawson City, April 29, 1902, that a recent order in council changes the rate of royalty on the gold output of the Yukon Territory. The present rate is 5 per cent on all the gold produced by any individual exceeding a gross output of $5,000 per year. It is now intended to reduce the royalty to 2½ per cent, with no exemption. The consul explains that gold dust is generally used in that section to liquidate debts, and merchantable gold dust, or dust thoroughly cleaned, is worth on an average $16 per ounce. Commercial dust is understood to mean a mixed dust of different creeks, adulterated with black sand or crushed white quartz, which is worth from $14 to $15 per ounce. Every practical miner will, if his dust be above the average in value, sell it to the bank, buy commercial dust at an average of $15 per ounce, and pay his creditors with it at the rate of $16 per ounce. The merchant, on the other hand, receives for the dust, on exchanging it for currency, only about $14.75 per ounce. As the large commercial houses are mainly American and buy their goods in the United States, they will be obliged, under the new order, to lose not only the discount of $1.25 on the dust, but pay the export tax as well; hence they are endeavoring to force the dust out of circulation. Already, the mechanics in many trades have refused to accept gold dust for wages, and are now paid in currency. In order to put the Territory on a currency basis, if possible, the merchants have decided to accept, after May 1, 1902, merchantable dust at $15 per ounce, the merchant to pay the 2½ per cent export tax.

MINES AND TRANSPORTATION ROUTES IN BRITISH COLUMBIA.

There has recently been considerable activity in prospecting and exploiting the different mining properties on Vancouver Island. Copper has been found in the Sooke Mountains, less than 30 miles from Victoria, and during the past two months 400 tons of high-grade ore have been mined. A cut of 1,000 feet or more leaves no doubt that a large vein exists there. The ore assays over 16 per cent copper, apart from the gold and silver.

The iron mines on Barclay Sound controlled by the Pacific Coast Steel Company (composed almost entirely of Americans) contain immense bodies of ore. The Sareta mine is especially valuable, and only needs to be developed to yield large results. The Copper Island and Secroft mines also show great value, and active steps are being taken to push work in them. A small steamer has been purchased, and short railroad lines to convey the ore to the shore have been surveyed. As soon as the necessary financial arrangements have been made, active operations will be commenced.

Work has been suspended on the copper mines of the Nahmint Mining Company, on Alberni Canal; also on the Monitor mine in the same locality. It is understood that the copper veins in each of these mines have become nearly exhausted.

The Yreka Copper Company (composed mostly of residents of Tacoma, Wash., where the head office is) controls valuable mines on the northwest coast of Vancouver Island, including what is known as the Comstock group, situated on Comstock Mountain, Quatsino Sound, which, with the Superior and Quatsino King groups, comprise about 900 acres of copper-gold mineral lands. These groups are contiguous and form practically one property. The average of eight assays recently made was, for all minerals, $21 a ton, while one sample ran 12.5 per cent copper and $350 gold. Free gold is of frequent occurrence in the main lead of the Comstock, and the average percentage of copper is expected to be over 10. A temporary wooden tramway, erected to transport the ore to the water's edge, is soon to be replaced with an aërial conveyor. The first shipment from these mines, consisting of 400 tons of ore, was taken to the Tacoma smelter on June 17. It is expected that hereafter similar shipments will be made monthly or oftener.

The Wreck Bay placer mines, on the west coast, which were discovered in May, 1900, and since operated with indifferent success, have passed into the hands of Seattle capitalists, who propose to spend $50,000 in developing the property with the latest improved machinery. The new owners believe that the fine gold in the black sands of Wreck Bay will, with modern methods, yield a handsome return on their investment.

American citizens are also in control of the Helga Mining Company at Clayoquot, west coast of Vancouver Island, where a ledge of apparently rich copper ore has been struck. A tunnel has been dug into the hill and other development work accomplished, involving the expenditure of $25,000, but so far no ore has been shipped.

Heretofore, there has been no smelter on Vancouver Island; now two are in process of construction, both on the east coast, about 40 miles from each other. The larger is at Crofton; the smaller at Ladysmith. The first is under the control of two Americans. Its daily capacity will be 350 tons of ore. The 500-horsepower engines to be used were built at Milwaukee. It is expected that the smelter will be running before August.

The new town of Crofton owes its birth to the building of this smelter. Although it is only four months old, the town now has a permanent population of over 500 persons. Water for the smelter is provided by two reservoirs up the mountain slope. The ore to be used is brought from the famous Mount Sicker mines, 12 miles to the west and 1,600 feet above sea level. These mines are connected with Crofton by a narrow-gauge railway, on which three mountain-climbing locomotives, manufactured at Lima, Ohio, carry the ore and laborers. Heretofore, monthly shipments of ore from the Lenora mine have been made to the Tacoma smelter, but during the past six months the ore has been permitted to accumulate. There is now $300,000 worth of ore awaiting the completion of the Crofton smelter. In this mine three tunnels at different levels have been opened.

In addition to the Lenora vein, another rich deposit of ore, known as the Tyee mine, has been found on Mount Sicker. The management of this mine is building a 3-mile aërial tramway to Ladysmith, for the purpose of conveying ore to the smelter in process of construction at that place. This smelter is to be completed during the present year.

Still another mine—known as the Copper Canyon Mine—is being developed at the foot of Mount Sicker. Two tunnels have been dug, and in the main excavation a vein 4 to 4½ feet in width has been uncovered. The ore is of a high grade, but as yet none has been shipped.

STEAMER SERVICE.

One of the results of the erection of the large smelter at Crofton and the developing of the Mount Sicker mines has been the establishment of a daily steamer service between Crofton and Sidney, connecting at the latter place with the Victoria, Sidney, and Terminal Railway, thus enabling passengers to leave Victoria for Crofton and return the same evening. A large barge is also making daily trips from Sidney to Crofton and the mainland, and a daily steamer service has been inagurated between Sidney and Nanaimo, calling at Chemainus and Crofton.

The Canadian Pacific Railroad Company, also, has in process of construction in England a new steamer for service on the Victoria-Vancouver route. This boat will have accommodation for 350 passengers, run 20 knots an hour, and make the trip in less than four hours. It is expected to be completed and in operation by December of the present year.

ABRAHAM E. SMITH,
Consul.

VICTORIA, *June 20, 1902.*

NEW TRANSPORT FACILITIES FOR WESTERN ONTARIO.

The arrangement lately made between the Pere Marquette and the Lake Erie and Detroit River Railwav companies will doubtless prove of vast importance to western Ontario. By virtue of this agreement, the Pere Marquette Company secures the right to run trains over the Lake Erie and Detroit River tracks from Port Sarnia, Ontario, to Rondeau and Port Stanley, Ontario, where it will connect with the car ferry from Conneaut, Ohio, thus making a short cut from the upper peninsula of Michigan to the Bessemer and Lake Erie Road and the Eastern States. Supplying as it does nearly all the soft coal for western Ontario from the Ohio and Pennsylvania fields, the ferry is already of considerable importance, but it is expected through this new arrangement that greater facilities will be added to the ferry system across Lake Erie, making it a line of general traffic, adapted for passengers as well as freight. There is now but one ferry steamer running across Lake Erie between Conneaut and Port Stanley. It has a capacity of twenty-six to twenty-eight loaded cars and makes twelve round trips per week. It is proposed to add several steamers of equal or greater capacity, sufficient to meet all the demands of the new line. The distance from Port Sarnia to Conneaut, Ohio, is about 150 miles, half by land and half by water.

HENRY S. CULVER,
Consul.

LONDON, ONTARIO, *July 16, 1902.*

NOTES.

Drought in Australia.—Consul-General J. P. Bray, of Melbourne, under date of May 30, 1902, sends an article clipped from one of the leading pastoral journals of Australia, descriptive of the long and severe drought at present prevailing. The purchasing power of the community, he adds, will be greatly curtailed by the continuance of this drought and the import of American goods consequently affected. The clipping reads, in part:

> Unless rain falls soon, the position of the country will become very serious. Australia is suffering more severely than is generally acknowledged from the continuance of the longest and most persistent drought on record. Not for one year, but for several years in succession, has the drought maintained its pitiless hold. In Victoria, the districts north of the dividing range are drought stricken, and the outlook for next year's harvest is ominous. In the back country of New South Wales and Queensland, the condition is much worse. The squatters have seen their stock perish without any hope of saving any but the smallest remnant, and that at an expense which, long continued, is proving an intolerable burden. In the western division of New South Wales, the number of sheep has decreased in ten years more than three-fourths, and the actual monetary loss to individuals is estimated at millions. All through Riverina there is a repetition of similar conditions, varying to some extent in severity according to natural causes, but all adding to the total of injury. In Queensland the pastoral industry is as severely assailed. The districts out west have become a veritable desert, without a blade of grass and with no visible sign of sustenance on which stock may be supported. Yet we are told that though the losses up to the present have been disastrous, they will be as nothing compared to the widespread misery which will result from the continuance of the drought for any length of time.

Lace in Paraguay.—Under date of June 2, 1902, Consul J. N. Ruffin, of Asuncion, reports:

The art of making lace by hand is well developed in Paraguay. It was taught the natives two hundred years ago by the missionaries, and has been transmitted from generation to generation till it is now quite general throughout the Republic. Some towns are devoted to making a certain kind of lace. In one town of 8,000 or 9,000 inhabitants, almost all the women and children, and many of the men, make lace collarettes, handkerchiefs, and ladies' ties. Another town makes lace embroidery, and others drawn-thread work, such as centerpieces, tray mats, tea cloths, doilies, etc. The designs used in making the lace are taken from the curious webs of the semitropical spiders that are so numerous here. On this account it is called "ñanduti," an Indian name which means spider web. This industry may be of service to American trade. There is scarcely a dealer in Paraguay who would not purchase American goods if it were not so difficult to get a draft on the United States. This is due to the fact that nearly all the exports go to Europe. Some of the principal lace makers here, however, have agreed to give the benefit of all their drafts on the United States for the facilitation of trade, if American importers and dealers in handmade lace and drawn-thread work should take up their product.

Finances of Guatemala.—Under date of June 12, 1902, Consul-General J. C. McNally, of Guatemala City, incloses translation of a Government decree in regard to Guatemalan bonds. The total amount of the foreign debt of Guatemala liquidated to June 30, 1902, it appears, will be as follows:

Principal on June 30, 1898	$7,216,046
Half of interest from 1898 to 1901 convertible in bonds*	432,963
Half of interest to June 30, 1901†	288,642
Interest from 1901 to 1902	288,642
Total	8,226,293

The decree states:

> As security for the payment of the debt, the collectors of customs shall deposit monthly in the Guatemala bank a sum sufficient to cover a twelfth part in gold of the total amount required for the yearly service. These sums shall be forwarded to the agents in London.

Currency in Guatemala.—Consul-General J. C. McNally reports from Guatemala City, June 23, 1902, that the silver peso is no longer current in the Republic of Guatemala. The money in use is paper currency and fractional nickel coins. The present value of the paper peso is about 15 cents in United States currency. In Government decrees as to values, customs duties, or other internal revenues where the peso is mentioned,‡ reference is made only to the paper peso, which fluctuates in value from day to day. While the Guatemala silver peso commands a premium at a ratio of about 3 for 1, the coin is not in ordinary circulation and is growing noticeably scarce. A Government decree of some time back provided that all obligations or debts contracted when silver was the current currency could be paid in paper. For some time past, exchange has been about 700 per cent premium for United States drafts or gold currency.

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* According to the agreement of November 18, 1898.

† $144,321 has been paid, leaving a balance due of $288,642.

‡ See ADVANCE SHEETS No. 1359 (June 5, 1902).

Public Roads in Nicaragua.—Consul C. Donaldson reports from Managua, June 10, 1902, that the President of Nicaragua, by a decree published May 28, has created a fund for the construction and repairing of public roads, which is to be raised by a direct personal tax on all male citizens over 18 years of age and on foreigners living in the country, with the exception of those in military service, students, and decrepit old men of over 60 years of age, as also subjects of charity. For the purpose of this tax, the men are divided into five classes, viz, day laborers, who shall not pay in money, but shall give two days' labor each year; clerks and artisans working in establishments not belonging to themselves, 1 peso (40.3 cents*); those working in their own establishments, 2 pesos (80.6 cents) annually; traveling agents and persons owning city property, 5 pesos ($2.015) annually; planters and farmers owning their own lands, 10 pesos ($4.03) annually.

The consul adds that great satisfaction is felt on account of the improvements to be made in the roads and public highways, which heretofore, without any especial fund, were always in a bad condition.

Completion of Railway in Nicaragua.—Under date of June 22, 1902, Minister W. L. Merry, of San José, advises the Department of the completion of the railway connecting Managua with Corinto, via La Paz, a station on the line between Corinto and Lake Managua. Mr. Merry adds:

This line will shorten the time between Corinto and Managua by about four hours, by doing away with transshipment at Momotombo. The railway, which is owned by the Government, is about 35 miles long and has been constructed of metal from the United States, at a cost of about 32,000 pesos ($12,896) per mile. The Government has had three steel-screw steamers on Lake Managua, two of which will now be transferred in sections to Lake Nicaragua and relaunched, making four steamers on Lake Nicaragua and two on Lake Managua.

Imports into Colombia via Venezuela.—The following has been received from Mr. A. M. Beaupré, secretary of legation at Bogotá, under date of June 4, 1902:

The disturbed condition of affairs between Colombia and Venezuela is having a most disastrous effect upon commerce in sections near the border line. Venezuela has closed the port of Maracaibo to Colombian articles of export and will not pass imports for Colombia without the payment of Venezuelan import duties. Until recently, while the payment of such duties was required, it was refunded upon the return of a consular certificate from Cucuta, the distributing point for that part of Colombia, showing the receipt of the goods. This has now been done away with, and goods brought in must pay duties at the custom-houses of both Republics, which is prohibitive for most articles.

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*At the present rate of exchange.

American Trade-Marks and Patents in Cuba.—The Department has received from the legation of Cuba, Washington, under date of July 5, 1902, the announcement of the following decision by the Department of Agriculture, Commerce, and Industry of Cuba, dated June 25, 1902, in respect to the registration of American trade-marks and patents, viz:

> Patents and trade-marks of all descriptions, printed matter, titles, and labels, duly registered in the Patent Office of the United States, for whose protection in this island application shall hereafter be made, from this date, by filing the same, shall be registered in the Department of which I have charge, if admissible, upon observing the procedure followed for the registration of those of other countries and upon the payment of $35 currency for patents and of $12.50 currency for trade-marks, prints, etc.—that is to say, the same fees as are paid by the other foreign and national marks and patents in lieu of the 1 peso currency,* indicated with regard to the American in the circular No. 21, of June 1, 1899, issued by the Division of Customs and Insular Affairs of the War Department, of Washington.

Canadian Machine for Laying Brick.—Commercial Agent F. S. S. Johnson, of Stanbridge, June 23, 1902, reports a recent invention, which consists of bricklaying by machinery instead of by hand. He says:

The machine, worked by two men and a lad, will lay 400 to 600 bricks per hour. Door and window spaces cause only a slight delay. The machine is suited for all plain work, such as walls, sheds, mills, factories, rows of cottages, piers of bridges, etc. Considerable pressure is put on the bricks, and it is claimed that the work is more firmly done than by hand. The invention will do the work of six or seven skilled bricklayers, and it is believed that a machine adapted to build a factory covering about 60 by 40 feet could be put on the market for $500. The apparatus can be readily worked after a fortnight's instruction.

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* The present value of the peso is about 60 cents.

New Material for Plastic Art.—Consul J. C. Freeman sends the following from Copenhagen, June 17, 1902:

"Terralit" is the name given to a new material for plastic art which has recently come into use in Denmark. The inventor is Mr. Ivar Hjort, of Copenhagen, who has experimented with it for the past two years. It is produced by a chemical process, which for the present is of course not made public. A peculiarity of terralit is that it gives the same color and appearance as the original which it is sought to represent, whether the original be copper, marble, bronze, antique bronze, porcelain, or ceramic ware. An exhibit has recently been opened in Copenhagen of forty or fifty of the most celebrated ancient and modern busts, statuettes, and animal figures made of this material. The representations of the bronzes are particularly successful.

The Telephone Service of Germany.—Under date of July 11, 1902, Consul-General Richard Guenther writes from Frankfort:

The telephone service of Germany is carried on by the Post-Office Department. According to an official report, the cost of the entire plant, up to April 1, 1902, amounted to about $42,000,000. Up to April 1, 1901, the cost had been $36,600,000. At the beginning of the present year, 2,024 places had public telephone stations, with 322,281 miles of line. These stations averaged 2,205,966 conversations per day, or about 804,000,000 per year. The following cities have the greatest number of public telephone stations:

	Number.
Berlin	51, 561
Hamburg	20, 823
Frankfort	9, 271
Dresden	8, 914
Leipzig	8, 725
Cologne	7, 484

The total number of employees in this service is 8,189, of which Berlin has 1,712.

Bohemia's Soft-Coal Production.—Consul F. W. Mahin reports from Reichenberg, June 16, 1902:

Statistics of the production of soft coal in this (the northern) part of Bohemia for the year 1901 are just published. They show a yield of 18,283,498 tons—an increase of 992,401 tons, or 5.4 per cent, over 1900, when a strike of the miners, lasting two months, materially reduced the output, and also crippled industries in Bohemia and neighboring parts of Germany. The number of miners employed in 1901 was 37,777, each of whom mined on an average 487 tons during the year—a decrease of 27 tons per man in comparison with 1900, doubtless due to the time concessions gained by the strikers. The total value of the output was 95,207,143 crowns ($19,327,050), or $1.057 per ton—an increase of 6 cents per ton, also presumably caused by concessions made to the strikers.

New German Shipyard.—Consul-General O. J. D. Hughes reports from Coburg, June 19, 1902:

For a long time the Vulcan Shipbuilding and Engineering Company has been looking for a suitable place close to the North Sea for another yard, as the building of vessels of the largest dimensions is becoming impossible at Stettin, owing to the shallow draft of water in the River Oder, and even in the Baltic itself. The River Elbe has been chosen as the locality for the new yard, and the intention is, at first, to build only large vessels here, the engines for which, and as far as possible the boilers also, will be supplied by the Stettin works.

Automobile and Bicycle Exposition at Leipzig.—Consul B. H. Warner reports from Leipzig, July 7, 1902:

The Fifth Annual International Automobile and Bicycle Exposition will be held under the auspices of the Society of German Bicycle Manufacturers at the Crystal Palace, Leipzig, from the 18th to the 27th of October next. This year, the exhibition will not be confined solely to automobiles and bicycles, but sewing machines, typewriters, cash registers, etc., will also be displayed. I am informed that there is already a great demand for floor space at the exposition, detailed information in regard to which can be obtained by writing to Herrn A. v. Slawinski, General-Secretair, Internationaler Markt & Ausstellung von Motarfahrzeugen, etc., Krystall Palast, Leipzig, Germany.

Art Exhibition at Turin.—Consul Pietro Cuneo reports from Turin, June 20, 1902, in regard to the international exhibition of modern decorative art* now in progress in that city. The exposition, he says, is a novelty, as its title indicates, and there is much to interest visitors. The American department was among the first to reach completion, and, though the exhibits are entirely by private citizens, the display is most creditable. Mr. Cuneo incloses a list of the American exhibitors, which has been filed for reference in the Bureau of Foreign Commerce.

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*ADVANCE SHEETS Nos. 1050 and 1092; CONSULAR REPORTS Nos. 251 and 252.

Exhibition of Fishery at St. Petersburg.—Consul-General W. R. Holloway sends the following from St. Petersburg, June 21, 1901:

The official report of the International Exhibition of Fishery, which was held at St. Petersburg, January 28 to March 9, 1902, has just been published. The countries participating were Russia and Finland, Austria, Belgium, Germany, Denmark, Egypt, India, Spain, Italy, Monaco, Norway, Persia, Roumania, Siam, France, Sweden, and Japan, the first making much the best exhibit; but, as a whole, the exhibit was not up to the standard of previous ones, the participants, Russia excepted, taking little or no pains to make a creditable display. Belgium was the only country that sent live fish.

Projected Railroad in Asiatic Russia.—Under date of July 15, 1902, Consul Samuel Smith, of Moscow, says:

It has been reported in official circles that a private company, representing Moscow and foreign capital, has been organized to build a railroad to connect the central Asian with the Siberian roads by a line from Andishan or Tashkent, along the western frontier of China, through the basins of the Irtish and Ob rivers. The project is to have it pass not only through the Akmolinsk district, but also through the southern districts of the government of Tomsk. This line would offer a short and convenient route for shipping central Asian products to eastern Siberia, Mongolia, and Manchuria, and also for bringing Chinese goods, especially tea, into the Transcaspian provinces and even into northern Persia.

Decortication of Ramie in France.—Walter T. Griffin, commercial agent at Limoges, informs the Department, June 20, 1902, that Mr. Pierre Faure, a well-known engineer of that city, has invented a machine for decorticating ramie. The new process, says Mr. Griffin, is rapid, practically automatic, and entirely satisfactory. The decortication is thorough, and does not injure the fiber. The machine is transported without trouble, and no more power is required to operate it than to operate an ordinary thrasher. A field of ramie has been planted near Limoges, and in the latter part of July next the stalks will be harvested and decorticated by the new method.

Proposed German Bank in South Africa.—Under date of June 21, 1902, Consul J. F. Monaghan writes from Chemnitz:

The Germans seem to realize that keen competition will develop in the rich South African trade. In order to give the German exporter every advantage, a local paper urges the establishment of a

German bank in South Africa, whereby German capital may be made entirely independent of the English banking and credit facilities upon which it must now rely. It is estimated that the German capital employed in South Africa at the present time amounts to 1,000,000,000 marks ($238,000,000), of which some 900,000,000 marks ($214,000,000) are invested in the Transvaal. The success of the German banking institutions in Brazil, Argentina, Chile, and in the Orient is cited. American exporters may find this suggestion worthy of being carried out for the advancement of their own trade interests.

Dynamite in South Africa.—Consular Agent Gordon telegraphs from Johannesburg, July 26, 1902, that a majority of the chamber of mines there favors the imposition of a coast duty of $1.80 per case on dynamite, to protect local factories. A strong minority desires free trade. The annual consumption is 300,000 cases. Mr. Gordon thinks United States factories should compete for this trade, and requests cable quotations from manufacturers for blasting gelatin and No. 1 dynamite, 30,000 cases yearly, five-year contract, delivered at an African port. These figures, he adds, apply to one group of mines only.

Demand for Drills and Tobacco Machinery in South Africa.—Consular Agent W. D. Gordon, of Johannesburg, under date of June 28, 1902, says that that agency has been asked to secure data in regard to drilling outfits, suitable for prospecting alluvial wash; a depth of 25 to 30 feet and a core 6 inches or more in diameter is desired. He also has an inquiry re tobacco machinery and tobacco seed. Mr. Gordon adds:

If our merchants will forward information to this office, I will see that it is placed in the proper hands without delay.

Mica in French Guinea.—Under date of July 24, 1902, Consul-General Robert P. Skinner writes from Marseilles:

Dr. Heckel, director of the National Colonial Institute at Marseilles, supplies the following bulletin:

> French Guinea possesses important deposits of mica, recently discovered, the exploitation of which should be as important for the country as the colony. Samples of favorable appearance are at the disposition of all who care to see them at the Colonial Museum, 63 Boulevard des Dames.

It is added that anyone desiring to correspond on the subject of the exploitation of these mica deposits should address inquiries to M. Famechon, directeur des douanes, at Conakry, French Guinea, Africa.

Harbor Regulations in New South Wales.—Consul F. W. Goding sends from Newcastle, June 16, 1902, copy of the regulations of the Sydney harbor trust. Similar rules, he says, will probably be adopted at Newcastle, and as many American vessels visit the ports it is of importance that charterers should be informed as to the expenses of vessels. The rules have been filed in the Bureau of Foreign Commerce, where they may be consulted by parties interested.

American Axes in Brazil.—The following has been received from Consul J. H. Johnson, of Santos:

I saw a traveling salesman here recently who represented a German hardware house, who had with him a full assortment of goods and who claimed to be doing a good business, and the presence of this salesman reminded me of something a gentleman told me recently. He said the axes manufactured in the United States were greatly preferred to any other, but that, on account of inferior packing, they were covered with rust when they arrived here, and hence were unsalable; that the Germans wrapped each ax in oil paper, and thereby protected them from the damp, salt atmosphere while in transit.

United States Goods in Canada.—Under date of July 4, 1902, Commercial Agent J. E. Hamilton writes from Cornwall:

The demand for American goods is increasing in Canada; hardware, brass goods, agricultural and farming implements, ladies' novelties, boots, shoes, and hats are especially popular, and goods are advertised as American in order to win patronage. No license is required in Ontario for commercial men or drummers, and samples are duty free.

New Furniture Factory in Canada.—Commercial Agent John E. Hamilton writes from Cornwall, July 15, 1902:

An agreement was signed to-day between the local town council and a joint-stock company, by which the latter binds itself to erect at Cornwall a furniture factory that will employ at least eighty hands and pay out in wages not less than $25,000 annually. In return, the council guarantees the company $15,000 cash, $1,200 with which to purchase a factory site, and exemption from taxes.

Mica Plant in Ottawa.—Consul-General C. E. Turner writes from Ottawa, June 25, 1902, that the General Electric Company is establishing a plant for the manufacture of mica in that city. It has leased the large plant formerly occupied by the Ottawa Porcelain Company, and will employ 150 hands immediately and about 400 in the near future. This, adds Mr. Turner, is only one of the many United States concerns which are gradually establishing plants in different sections of Canada.

Third and Fourth Class Postal Rates in Canada.—Commercial Agent J. E. Hamilton, of Cornwall, July 4, 1902, says:

The change in postal rates on third and fourth class matter went into effect on July 1. The rates are double—2 and 4 cents, respectively, for the first ounce or fraction thereof and the same for every additional ounce or fraction.

Use of Electricity in Agriculture.—Consul Robert S. S. Bergh sends from Gothenburg, June 10, 1902, the following extract from the Morning Post, of that city:

> An effort is being made to use electricity in agriculture. A seed field is covered by a network of wire, and a strong electric current is turned on during nights and chilly days, but cut off during sunny and warm weather. The system is invented by Professor Lemström, of Helsingförs, Finland. Nothing can be said as yet as to its practicability.

German Iron for America.—Consul-General Richard Guenther reports from Frankfort, July 12, 1902:

According to a recent report of the Chamber of Commerce at Dortmund, the extraordinary increase of demand in the United States has made it possible for German works to dispose of their surplus there. This possibility still exists, and these orders have prevented further reduction of output in Germany, although it is not to be presumed that this market will be anything but temporary, as American establishments will eventually be able not only to supply the home demand, but to throw quantities of iron and steel goods into the older industrial countries.

Petroleum Export from Austria.—Consul F. W. Mahin writes from Reichenberg, June 16, 1902:

The Austrian refiners of petroleum have effected an organization for export purposes. It is announced that they intend to invade France, Germany, Switzerland, and Italy, and wrest those countries, if possible, from the American company which now supplies their demands for petroleum, and that they also propose contesting certain markets with Russia.

German Demand for Cast Spring-Steel Plate.—Consul J. J. Langer writes from Solingen, July 10, 1902:

I have an inquiry from P. D. Rasspe Soehne, Solingen 2, Germany, manufacturers of iron and steel goods, for the names of United States firms making cast spring-steel plate, used in the manufacture of saws. I shall be glad to refer to the party in question any information I can obtain.

Alcohol for Fire Engines in Hanover.—Consul-General Richard Guenther writes from Frankfort, under date of July 8, 1902:

The use of alcohol for technical purposes is being extended. The chief of the fire department at Hanover has constructed an alcohol firing apparatus, in connection with an automobile fire engine, which is said to be satisfactory. The fire department of this city had been using the first automobile fire engine in Germany, which does away with the disadvantages of smoke and noise during the trip, and it proposes to procure another alcohol automobile engine.

German Exports to United States, 1901-2.—Ambassador Andrew D. White writes from Berlin, July 5, 1902, that the declared value of the exports to the United States, as shown by the statements made to the embassy by the (four) United States consuls-general in Germany for the fiscal year ended June 30, 1902, was $102,714,000, being an increase over the preceding year of about $2,750,000.

American Vines in Bulgaria.—Consul F. D. Chester writes from Budapest, June 22, 1902, that according to the official horticultural paper of Hungary, the Bulgarian Minister of Commerce and Agriculture has forbidden the importation of American grapevines, a large quantity of which had been brought from Hungary into the district of Viddin, Bulgaria.

American Coal in Denmark.—Consul J. C. Freeman writes from Copenhagen, June 21, 1902, that his report on "American gas coal in Denmark"* has led to important orders for American gas coal from France and other European countries.

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*Advance Sheets No. 1317 (April 16, 1902); Consular Reports No. 261.

New Mexican Railway.—Under date of July 3, 1902, Consul-General P. C. Hanna, of Monterey, reports that the Coahuila and Pacific Railroad Company (an American property) has completed its line from Saltillo to Torreon, thus giving Saltillo—the capital of the State of Coahuila—a second connection by rail with the United States.

Guatemalan Northern Railway.—Under date of June 12, 1902, Consul-General J. C. McNally writes from Guatemala City that all work on the Northern Railway has been suspended, and that owing to the rains the road is in bad condition. It is rumored that bridges on the line have been washed away.

Increase of Colombian Import Duties.—Under date of June 12, 1902, the Department has received from Mr. A. M. Beaupré, secretary of legation at Bogotá, translation of a decree increasing the Colombian customs duties 50 per cent on all classes of foreign merchandise imported into the country, the increase to take effect July 1, 1902.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) have been transmitted since the date of the last report to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
F. W. Mahin, Reichenberg	June 17, 1902	Deforestation in Russia	Department of Agriculture.
J. C. Covert, Lyons	June 26, 1902	Vegetable and fruit crops	Do.
Do	June 23, 1902	Grafting apple trees	Do.
S. Smith, Moscow	July 3, 1902	Crops	Do.
Do	June 7, 1902	Population of Moscow	Census Bureau.
E. Schneegans, Saigon	June 5, 1902	Rice market	Department of Agriculture.
Do	June 19, 1902	do	Do.
M. H. Twitchell, Kingston, Ont.	July 31, 1902	Crops	Do.
O. H. Baker, Sydney, N. W. S.	July 9, 1902	Australian grasses	Do.
F. D. Chester, Budapest	June 18, 1902	Workingmen's licenses	Department of Labor.

FOREIGN REPORTS AND PUBLICATIONS.

Trade and Industries of Poland in 1901.—The following extracts are taken from a British Foreign Office report (No. 2810):

The industrial crisis which prevailed in Poland throughout the year 1901 reacted upon commerce and affected all branches of industry and trade. The characteristic feature of 1900 and 1901 was the formation of rings and syndicates, in order to put an end to the continual fall in price in all articles arising from competition, and to insure the working of industries without loss. Syndicates were formed in Poland before they were in Russia; they are prohibited by law, but at the present time the cement, superphosphate, jute, paper, and glue industries are syndicated, the first two comprising only Polish works and the remainder those of the whole Empire. The proposed iron syndicate will be one of the most important. It is believed that the crisis in the iron industry will lead to a specialization in the trade, and that in the future everything except electrical machinery and apparatus will be bought in the country. The iron works of Russia can supply steam engines, boilers, machinery, and all iron necessary for building purposes. The Polish agricultural societies have been extremely useful. Special facilities have been granted to them by the Government as to freights and loans. In future, they will be the most important buyers of agricultural articles, though, owing to the almost total failure of the crops in Poland last year, there was but little demand for agricultural machinery. Large hay presses found ready sale in Volhynia and Podolia. Kettles for boiling potatoes, root cutters, chaff cutters, spring-toothed harrows of the American make, and American green-bone cutters for poultry food found a ready sale. There was much talk of establishing cooperative dairies, which would create a demand for dairy machinery, cooling appliances, etc. For some years, the demand for cotton machinery will be limited to pieces to replace old machinery.

All the large towns of Poland have shops which sell foreign goods—chiefly German—and it is worth while trying to open up business in many lines. It can only be done, however, by a traveler speaking Polish and Russian, or at least German, and by offering goods at the same price and on the same terms as those who at present supply the market, quoting prices in Russian currency and with Russian weights. Six months' credit is usual in all business transactions. The buying capacity of the people is very limited, and goods must be cheap. The duty and customary 30 per cent that the retail shopkeeper expects to make on all transactions must also be remembered.

The export from Poland to Siberia is increasing, and embraces nearly all branches of industry, the most important being cotton goods, barley, spirits, machinery and apparatus, furniture, and hardware. Lodz is becoming a dangerous competitor with Moscow in the markets of central Asia. Last year she disposed of $729,975 worth of goods. This was done by cutting down prices to a minimum and making patterns specially for local Asiatic taste.

Of the proposed improvements on the Government railway lines, only very few were carried out. The Warsaw-Kaslisz line, conceded to the Warsaw-Vienna Railway Company, has been pushed so rapidly that traffic will probably begin on some of the sections in July, 1902. It has also been decided to construct a line from Siedlee to Bologoje, on the St. Petersburg-Moscow line, and work will be commenced this year. This line will open up the new districts in the governments of

Minsk and Mohylev, and will especially benefit possessors of forest lands. The work of construction on the railway line from Radom to Warsaw has not begun. This line will considerably shorten the distance between the Dombrowa coal fields and Warsaw and open up a new district with large deposits of iron ore, and there is sure to be a heavy transit traffic. The Czenstochowa-Herby line, with electric traction, is nearing completion, so that traffic over it is likely to begin in the autumn of 1902. The narrow-gauge railways are not as prosperous as was expected. The goods traffic has diminished considerably, while the passenger traffic is developing slowly. A considerable fund has been placed by the Government at the disposal of the railways in Poland.

Development of Indo China.—La Quinzaine Coloniale, Paris, March 25, 1902, says:

In his report on Indo China, M. Doumer has shown the economic progress which the colony has made during the five years of his administration. The results obtained are remarkable, and few countries assuredly have experienced so rapid a development. The general commerce, including goods in transit and the coasting trade, has increased 148 per cent since 1896. The following table gives the value of this trade—imports, exports, transit, and coasting:

Year.	Value.	
	Francs.	
1897	257,123,310	$49,624,799
1898	298,518,837	57,614,030
1899	359,614,105	69,405,522
1900	474,026,605	91,487,135
1901	534,949,876	103,245,326

The totals of the import and export trade were:

Year.	Imports.	Exports.
1897	$17,019,317	$22,342,181
1898	19,771,759	24,231,790
1899	22,284,914	26,397,534
1900	35,906,567	30,032,032
1901	39,043,137	31,025,089

This shows an increase in the imports of 150 per cent and in the exports of 82 per cent from 1896 to 1891. Indo China produces nearly all the raw material necessary to manufactures, and, on account of the extreme cheapness of manual labor, competition by European workmen is impossible. Previous to 1897, the name Indo China was merely a geographic expression without political entity. The number of European rural exploitations was 323, with an area of 199,808 acres. At the end of 1901, they numbered 717, with an area of 883,336 acres. During the same period, the general commerce of Indo China, favored by five good consecutive harvests, has passed from $49,624,799 to $103,245,326, including the import, export, transit, and coast trade. As a result of this general prosperity, scientific institutions already created have been developed and new ones founded—the French School of the Far East, the Pasteur Institute of Nha-Trang, the Bacteriological Institute and Laboratory of Hanoi, and the Meteorological and Magnetic Observatory of Phu-Lien.

During his five years' administration, M. Doumer has worked to make Indo China the basis of French influence in the East. It has become responsible for the subsidy of the Yunnan Railway and the expenses of the French installation on Chinese territory. In addition, Indo China spends some 2,500,000 francs ($482,500) annually in maintaining schools, post-offices, and dispensaries, and in subsidizing French navigation companies operating in Chinese waters.

On the subject of the instruction that should be given to the natives, M. Doumer expresses himself as follows: "As long as the mental capacity and the social condition of the natives are not changed, care should be taken not to destroy the moral foundation of their existence. The principles which make the family tie strong, parents respected, and public authority obeyed are taught in the books of native instruction. While learning to read the first characters, they learn the fundamental rules of the ethics of Confucius; they engrave in their memory the precepts which should guide them throughout their existence. If this instruction is supreme to them, with what will we replace it in our schools?"

The crowning work of the last five years has been the organization of general services common to all Indo China—the administration of customs duties, taxes, justice, civil affairs, postal and telegraphic service, and the creation of a general budget. The colony has been authorized to make a loan of 200,000,000 francs ($38,600,000) for the construction of a network of railways 1,056 miles long, of which 186 miles will be completed before the end of the current year.

Foreign Commerce of Uruguay in 1901.—According to the official returns published by the Dirección General de Estadistica, Montevideo, the value of the foreign trade of Uruguay in 1901 was figured at 51,423,058 pesos ($53,171,442), a decrease from the figures of 1900 of 1,966,010 pesos ($2,032,855). The following table gives the values of the import and export trade for 1901 and 1900:

Year.	Imports.	Exports.	Total.
1901	$24,497,458	$28,673,984	$53,171,442
1900	24,793,465	30,410,832	55,214,297

The trade of 1901 was distributed according to countries as follows:

Country.	Imports.		Exports.	
	Pesos.		*Pesos.*	
England	6,167,348	$6,457,038	2,270,094	$2,347,277
Germany	2,913,537	3,012,597	3,195,124	3,303,758
Italy	2,108,469	2,180,157	482,818	499,234
France	2,161,139	2,234,618	4,925,604	5,093,075
Spain	1,860,762	1,924,028	615,086	635,999
Brazil	1,540,955	1,593,347	4,454,250	4,605,694
Argentine Republic	3,074,753	3,179,295	4,339,587	4,487,133
United States	2,077,750	2,148,394	1,938,128	2,003,024
Belgium	1,424,008	1,472,424	4,188,009	4,330,401
Cuba	99,615	103,002	463,475	479,233
Chile	87,684	90,665	288,547	298,358
Paraguay	152,562	157,749	....	....
Others	23,340	24,134	570,404	589,798

United States Trade with West Africa.—A recent edition of the Chamber of Commerce Journal, London, contains the following:

The commercial traffic between the United States and the Guinea Coast has considerably increased since the commencement of the year 1900. American goods are mostly imported by sailing vessels via Boston, but quantities find their way to the Gold Coast and Liberia via Liverpool. Large trading vessels leave the American coast with cargoes destined for the Gold Coast and Liberia. The merchandise consists principally of petroleum, flour, bread, and other food stuffs, timber for building purposes, hardware, tobacco, gunpowder, etc. The Americans, in catering for the West African market, profit from the fact that they are accustomed to provide about 9,000,000 of the black race in the United States with similar productions as are required in West Africa. The progress made by the English, French, and German colonization, as well as the North American trade on the coast of Guinea, have also stimulated the Republic of Liberia, where they have led to a movement favoring progress and culture, which will render this State, hitherto of small commercial importance, a vast field for the commerce and industry of the civilized world.

Peat in Ireland.—The following is taken from a recent issue of the London Times:

All acquainted with Ireland know that to the almost total absence of workable coal fields, due to the denudations of the so-called "Ice Age," must be mainly attributed that want of industrial occupation which differentiates this part of the United Kingdom so sharply from England and Scotland.

In these latter countries, no less than thirteen electrical-power distribution companies have already been or will very soon be authorized, owing to the presence of a cheap and abundant supply of coal, while only one (the Shannon Power Company) has received Parliamentary sanction for Ireland.

Nevertheless Ireland has, in its bogs, fuel reserves which—apparently inexhaustible and hitherto practically untouched—should, under proper scientific direction and the applications of capital, following the lead thus given, allow her eventually to take her place among the manufacturing nations of the world; and it needs no prophet to foretell that by the use of turf as fuel we shall see provision made for the generation of electrical energy applicable to every form of industrial activity, not only for railways, tramways, canals, factories, heating and lighting of towns, etc., but also not improbably, in the near future, to most agricultural operations.

Hitherto, owing to its bulk and cost of carriage, making its employment uneconomical for locomotives and steam engines generally, turf has been unable to compete with imported coal as a fuel; but there is no reason why, with suitably placed generating stations, it should not prove, with properly designed furnaces, quite capable of competing in every way with coal for the production of electrical energy.

In the pre-railway days of the last century, the late Sir Richard Griffith, then a young man in the employment of the Irish Board of Works, surveyed all the most important of the bogs in the country and framed schemes for their reclamation.

In the archives of the board in Dublin are now to be found his most interesting plans and reports, comprising designs for reticulating the bogs with a series of channels which, while serving the purpose of drains for unwatering the bogs, were in their main arteries to answer the purpose of navigable canals, and thus supply a complete system of water carriage for passengers, goods, and agricultural produce.

In the then state of communications, the proposals were admirable and practicable, but the object in mentioning the matter in connection with the foregoing remarks is to show that every possible information about the localities, areas, depths, etc., of the Irish bogs has long since been placed on record, and that by following up the idea of canalization in immediate connection with any selected site for a generating center, turf fuel could be supplied at a cost which it could hardly be doubted would compete, if not favorably (though this is probable), at least on equal terms with coal. Channels radiating from, say, a center on the great bog of Allan and worked by electric barges would supply the station with fuel at a mere nominal cost, probably not more than the equivalent of 5s. ($1.21) a ton for coal.

One has only to glance at the geological map of Ireland to be assured that by far the greater part, and that often the most impoverished, could be brought within the sphere of action of suitably selected generating stations, assuming that the radius of such would not be more than, say, 16 miles, though of course, as known, 40 or 50 miles may not in the near future be too much to look forward to.

Trade of the Friendly Islands in 1901.—A British Foreign Office report on the trade of the Friendly Islands in the year 1901 (annual series No. 2267) says that the protectorate is divided into three groups, viz, Tonga, Haabai, and Vavan. Sydney and Auckland are the two ports through which nearly all goods are sent to the islands. The following comparative statement gives the value of imports and exports for the years 1899–1901:

Year.	Imports.	Exports.
1890	$360,724	$345,089
1900	432,720	519,708
1901	312,716	428,291

The quantities of imports are not obtainable, but they consist chiefly of food stuffs, wearing apparel, and timber. The imports from the United States are prints (by the yard), tools (practically the whole import), boots and shoes, and kerosene. The latter was originally all from the United States, but now Palembang and Russian are largely competing with American. The food stuffs and timber come chiefly from New South Wales and New Zealand.

The principal articles of export are copra, candle nuts, fungus, and fruit. The total quantities of these products exported during 1901 were:

Copra	tons	7,740
Candle nuts	do	81
Fungus	do	34
Oranges	cases	47,378

Bananas:		
Cases		13,903
Bunches		1,047
Pineapples	cases	1,504
Cocoanuts	sacks	33

Copra, which is the principal article of export, is likely to decrease in future years, owing to the want of energy on the part of the natives in planting cocoanuts. There is a law that each native must plant a certain number annually, but it never appears to be enforced. There is no reason why the protectorate should not produce from 50,000 to 100,000 tons of copra per annum, according to good and bad seasons.

Sunflower-Oil Industry in the Caucasus.—The Nachrichten für Handel und Industrie, Berlin, June 20, 1902, says:

> The cultivation of the sunflower plant has been extensively adopted by the peasantry and farmers in the district of Novorossisk within the past three or four years. The manufacture of oil cake out of the seeds of this plant is very remunerative, and the industry is rapidly increasing in proportions. The sale of the oil cake alone, it is claimed, covers all the working expenditure of the oil mills. The stalks of the plant are used as fuel for running the machinery, and from the ashes which remain 25 to 30 per cent of potash is obtained.

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PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE.*

The publications of the Bureau of Foreign Commerce, Department of State, are:

I.—COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—CONSULAR REPORTS, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

III.—ADVANCE SHEETS, CONSULAR REPORTS, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

IV.—EXPORTS DECLARED FOR THE UNITED STATES, issued quarterly, and containing the declared values of exports from the various consular districts to the United States for the preceding three months. There is also issued an annual edition of Declared Exports, embracing the returns for the fiscal year.

V.—SPECIAL CONSULAR REPORTS, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued by the Bureau prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880–81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885–86 (a portion of this work was published as CONSULAR REPORTS No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all these publications except Tariffs in Central America, etc., are exhausted and the Department is, therefore, unable to supply copies.

In 1890, the Department decided to publish reports on special subjects in separate form, to be entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Files in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Stave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

*** Formerly Bureau of Statistics. Name changed to Bureau of Foreign Commerce by order of the Secretary of State, July 1, 1897.**

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia, Africa, Australasia, and Polynesia. Supplement (1900). Tariffs of Chile and Nicaragua.

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Vol. 19 (1900).—Paper in Foreign Countries; Uses of Wood Pulp.

Vol. 20 (1900).—Part I. Book Cloth in Foreign Countries, Market for Ready-Made Clothing in Latin America, Foreign Imports of American Tobacco, and Cigar and Cigarette Industry in Latin America. Part II. School Gardens in Europe. Part III. The Stave Trade in Foreign Countries.

Vol. 21 (1900).—Part I. Foreign Markets for American Coal. Part II. Vehicle Industry in Europe. Part III. Trusts and Trade Combinations in Europe.

Vol. 22 (1900 and 1901).—Part I. Acetic Acid in Foreign Countries. Part II. Mineral-Water Industry. Part III. Foreign Trade in Heating and Cooking Stoves.

Vol. 23 (1901).—Part I. Gas and Oil Engines in Foreign Countries. Part II. Silver and Plated Ware in Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Cotton Textiles in Foreign Countries, Files in Spanish America, Fire and Building Regulations, Fruit Culture, Gas in Foreign Countries, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Port Regulations, Refrigerators and Food Preservation; Sericulture, etc.; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

There was also published, in 1899, Proclamations and Decrees during the War with Spain, comprising neutrality circulars issued by foreign countries, proclamations by the President, orders of the War and Navy Departments, and war decrees of Spain.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications of the Bureau available for distribution, copies are mailed to applicants without charge. In view of the scarcity of certain numbers, the Bureau will be grateful for the return of any copies of the monthly or special reports which recipients do not care to retain. Upon notification of willingness to return such copies, the Department will forward franking labels to be used in lieu of postage in the United States, Canada, the Hawaiian Islands, Porto Rico, and Mexico.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address in notifying the Bureau of the fact.

In order to prevent confusion with other Department bureaus, all communications relating to consular reports should be carefully addressed, "Chief, Bureau of Foreign Commerce, Department of State, Washington, U. S. A."

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston made the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to $20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States."

The following statements, running from January 1, 1874, to July 1, 1902, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1898, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1875–1877, 1879–1882, 1884–1887, 1895, and 1897 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic	Gold and silver	Peso	$0.96,5	Gold—argentine ($4.82,4) and ½ argentine; silver—peso and divisions.
Austria-Hungary*	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
British Honduras	do	do	1.00	
Chile	do	Peso	.36,5	Gold—escudo ($1.25), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Costa Rica	do	Colon	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centisimos.
Cuba	Gold and silver	Peso	.92,6	Gold—doubloon ($5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Ecuador †	do	Sucre	.48,7	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
India ‡	Gold	Rupee	.32,4	Gold—sovereign ($4.8665); silver—rupee and divisions.
Italy	Gold and silver	Lira	.19,3	Gold--5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan §	Gold	Yen	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	do	Dollar	1.00	
Netherlands	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Peru ‖	do	Sol	.48,7	Gold—libra ($4.8665); silver—sol and divisions.
Portugal	do	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia ¶	do	Ruble	.51,5	Gold—imperial ($7.718) and ½ imperial ($3.80); silver—¼, ½, and 1 ruble.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	do	Peso	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

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* The gold standard went into effect January 1, 1900 (see Commercial Relations, 1899, Vol. II, p. 7). Values are still sometimes expressed in the florin, which is worth 2 crowns.

† Gold standard adopted in November, 1900. (See CONSULAR REPORTS No. 225, June, 1899.)

‡ For an account of the adoption of the gold standard, see CONSULAR REPORTS No. 238, p. 359.

§ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

‖ Gold standard adopted October 13, 1900.

¶ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896–97, p. 254.

B.—*Countries with fluctuating currencies, 1874–1898.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1878.	1883.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin..............	$0.47,6	$0.45,3	$0.40,1	$0.34,5	$0.33,6	$0.42
Bolivia	........do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.81,2	.69,9	.68	.85
Central America.....	........do	Peso	.96,5	.91,8	....	.69,9	.68	.85
China	........do	Haikwan tael..	1.61	....	....	....	....	....
Colombia...............	........do	Peso	.96,5	.96,5	.81,2	.69,9	.68	.85
Ecuador..................	........do	........do..............	.96,5	.91,8	.81,2	.69,9	.68	.85
Egypt †....................	Gold	Pound (100 piasters).	....	4.97,4	4.90	4.94,3	....	....
India	Silver	Rupee..............	.45,8	.43,6	.38,6	.32,2	.32,3	.40,4
Japan	Gold.........	Yen..............	.99,7	.99,7	....	.99,7	.99,7	.99,7
	Silver		....	....	.87,6	.75,3	.73,4	.91,7
Mexico	........do.........	Dollar	1.04,7½	.99,8	.88,2	.75,9	.73,9	.92,3
Netherlands‡.........	Gold and Silver.	Florin..............	.40,5	.38,5	....	....	....	....
Peru......................	Silver	Sol	.92,5	.91,8	.81,2	.69,9	.68	.85
Russia.....................	........do	Ruble..............	.77,17	.73,4	.65	.55,9	.54,4	.68
Tripoli	........do	Mahbub of 20 piasters.	.87,09	.82,9	.73,3	.63	.61,4	.76,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1891.	1892.	1893.	1894.	1896.	1898.
Austria-Hungary*.	Silver	Florin..............	$0.38,1	$0.34,1	....	....	....	....
Bolivia	........do	Boliviano	.77,1	.69,1	$0.61,3	$0.51,6	$0.49,1	$0.42,4
Central America.....	........do	Peso	.77,1	.69,1	.61,3	.51,6	.49,1	.41,4
Colombia...............	........do	........do..............	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Ecuador..................	........do	........do..............	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
India	........do	Rupee..............	.36,6	.32,8	.29,2	.24,5	.23,3	.20,1
Japan§	........do	Yen..................	.83,1	.74,5	.66,1	.55,6	.52,9	....
Mexico	........do	Dollar	.83,7	.75	.66,6	.56	.53,3	.46
Peru......................	........do	Sol..................	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Russia§....................	........do	Ruble..............	.61,7	.55,3	.49,1	.41,3	.39,3	....
Tripoli	........do	Mahbub of 20 piasters.	.69,5	.62.3	.55,3	.46,5	.44,3	....

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* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (see CONSULAR REPORTS No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

§ See footnote, table of fixed currencies.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1899.				1900.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.43,9	$0.43,4	$0.44,3	$0.43,6	$0.42,7	$0.43,6	$0.43,8	$0.45,1
Central America.	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.45,1
China	Amoy tael	.71	.70,2	.71,6	.70,5	.69,1	.70,5	.70,9	.72,9
	Canton tael	.70,8	.70	.71,4	.70,3	.68,9	.70,3	.70,7	.72,7
	Chefoo tael	.67,9	.67,2	.68,4	.67,4	.66,1	.67,4	.67,8	.69,7
	Chinkiang tael	.69,3	.68,6	.69,9	.68,9	.67,5	.68,8	.69,3	.71,2
	Fuchau tael	.65,6	.65	.66,2	.65,2	.64	.65,2	.65,6	.67,4
	Haikwan tael	.72,2	.71,4	.72,8	.71,8	.70,3	.71,7	.72,1	.74,2
	Hankau tael	.66,4	.65,7	.67	.66	.64,7	.65,9	.66,3	.68,2
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.68,2	.67,5	.68,8	.67,8	.66,5	.67,7	.68,2	.70,1
	Niuchwang tael.	.66,5	.65,9	.67,1	.66,1	.64,8	.66,1	.66,5	.68,4
	Shanghai tael	.64,8	.64,1	.65,4	.64,4	.63,1	.64,4	.64,8	.66,6
	Swatow tael	.65,5	.64,9	.66,1	.65,1	.63,9	.65,1	.65,5	.67,4
	Takao tael	.71,4	.70,7	.72	.71	.69,6	.70,9	.71,4	.73,4
	Tientsin tael	.68,8	.68	.69,4	.68,3	.67	.68,3	.68,7	.70,7
Colombia	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.45,1
Ecuador†	do	.43,9	.43,4	.44,3	.43,6	....	....	....	....
India	Silver rupee‡	.20,8	.20,6	.21	.20,7	.20,3	.20,7	.20,8	....
Mexico	Silver dollar	.47,7	.47,2	.48,1	.47,4	.46,4	.47,3	.47,6	.49
Persia	Silver kran	.08,1	.08	.08,2	.08	.07,9	.08	.08,1	.08,3
Peru†	Silver sol	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.48,7

Countries.	Monetary unit.	1901.				1902.		
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.
Bolivia	Silver boliviano.	$0.46,8	$0.45,1	$0.43,6	$0.42,8	$0.41,3	$0.40,3	$0.38,2
Central America	Silver peso	.46,5	.45,1	.43,6	.42,8	.41,3	.40,3	.38,2
China	Amoy tael	.75,7	.72,9	.70,5	.69,1	.66,9	.65,1	.61,8
	Canton tael	.75,5	.72,7	.70,3	.68,9	.66,7	.64,9	.61,7
	Chefoo tael	.72,4	.69,7	.67,4	.66,1	.63,9	.62,3	.59,1
	Chinkiang tael	.74	.71,2	.68,8	.67,5	.65,3	.63,6	.60,4
	Fuchau tael	.70,1	.67,5	.65,2	.64	.61,8	.60,2	.57,2
	Haikwan tael	.77,1	.74,2	.71,7	.70,4	.68	.66,3	.62,9
	Hankau tael	.70,9	.68,2	.65,9	.64,7	.62,6	.60,9	.57,9
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.72,8	.70,1	.67,8	.66,5	.64,3	.62,6	.59,5
	Niuchwang tael.	.71	.68,4	.66,1	.64,8	.62,7	.61,1	.58
	Shanghai tael	.69,2	.66,6	.64,4	.63,2	.61,1	.59,5	.56,5
	Swatow tael	.70	.67,4	.65,1	.63,9	.61,8	.60,2	.57,1
	Takao tael	.76,2	.73,4	.70,9	.69,6	.67,3	.65,5	.62,2
	Tientsin tael	.73,4	.70,7	.68,3	.67	.64,8	.63,1	.59,9
Colombia	Silver peso	.46,8	.45,1	.43,6	.42,8	.41,3	.40,3	.38,2
Mexico	Silver dollar	.50,9	.49	.49	.46,4	.44,9	.43,7	.41,5
Persia	Silver kran	.08,6	.08,3	.08,3	.07,9	.07,6	.07,4	.07

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[*] The "British dollar" has the same legal value as the Mexican dollar in Hongkong, the Straits Settlements, and Labuan.

[†] See footnote, table of fixed currencies.

[‡] The sovereign is the standard coin of India, but the rupee is the money of account. See also table of fixed currencies.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Berkovets	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do*	Japan	1.31 pounds.
Do	Java, Siam, and Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chetvert	Russia	5.7748 bushels.
Chih	China	14 inches.

*More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Funt	Russia	0.9028 pound.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	6 feet.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Koku	Japan	4.9629 bushels.
Korree	Russia	3.5 bushels.
Kwan	Japan	8.28 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11⅜ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Spain	1.0144 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet inch planks, 600 superficial feet.
Manzana	Costa Rica	1¾ acres.
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	82 2/7 pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles.
Do	Denmark (geographical)	4.61 miles.
Milla	Nicaragua and Honduras	1.1493 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.82838 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands.	137.9 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Spain	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile,* Chile, Mexico, and Peru	101.41 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¾ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acres.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9305 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.

*Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the Peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4.5 bushels.
Tunnland	Sweden	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Spain	0.914117 yard.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.417 gallons.
Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.

Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

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DIAMONDS AND CARBONS IN BAHIA.

Diamonds are said to have been first found in the State of Bahia in 1821, in the range of mountains known as Serra do Sincorá; but not until 1844—when José Pereira do Prado, who was traveling from that region to Bahia City and camped for the night on the bank of the Mocuge, a small tributary to the Paraguaçu River, and there by accident found a quantity of diamonds—was any impetus given to mining for the precious stones.

As soon as it became known that diamonds in quantity had been found, great numbers of people set out for that region and at the site of the discovery S. João do Paraguaçu, otherwise known as Santa Isabel, was founded and has continued to be one of the chief diamond centers.

The State divides the diamond region into fourteen districts, namely, Lençoes, Andarahy, Chique Chique, Santa Isabel, Cravada, Lavrinha, Campestre, Morro do Chapeo, Bom Jesus, S. Ignacio, Chapada Velha, Paraguaçu, Sincorá, and Cannavieiras, the region taking its name from the town which forms its center. A better division would be into two sections, in accordance with the geological formation and position—one in the center of the State and tributary to the Paraguaçu River and the other in the southern portion of the State along the Pardo River.

By far the most productive section is that first mentioned under my classification. It has been almost constantly worked from the date of its discovery, in 1844, and it continues to be productive, though the number extracted has of late been decreasing, because of the lack of proper tools and machinery.

Prior to the discovery of the South African mines, this section was the greatest producer of diamonds, and prices were high; but the output in Africa tended to decrease interest in the Bahia mines.

PARAGUAÇU DISTRICT.

The most productive portion of the Paraguaçu River section is about four days' journey from Bahia City. It is reached by taking a small steamboat which crosses the bay and goes up the Paraguaçu River to Cachoeira (a distance of about 45 miles and consuming from six to eight hours), and taking the train from there to Bandeira de Mello, 254 kilometers (157.7 miles), involving from ten to twelve hours' travel. From Bandeira de Mello, it is necessary to take mules and travel about 64 miles to Andarahy.

Diamonds are first encountered in the bed of the Paraguaçu River, 182 kilometers (103 miles) from Cachoeira, at a place called João Amaro. They are found from there up to the source of the river, but from João Amaro to Andarahy in very small quantities, doubtless due to the difficulty in mining them, as they seem to occur only in the river bed.

The Paraguaçu district is about 172 miles long, and varies in breadth from 3 or 4 miles to about 16 miles at its widest part. It includes the mountain ranges known as Serra do Sincorá, from the village of Sincorá northward, and the head waters of the Paraguaçu and Una rivers, Serra das Lavras Diamantinas, Serra dos Remedios, Chapada Velha, and Serra do Espinhaço as far as the region about the village of Morro do Chapeo.

The most productive area seems to be in the foothills to the east of Serra das Lavras Diamantinas, particularly along the many small streams tributary to the Paraguaçu River, with the towns of Santa Isabel, Chique Chique, Andarahy, and Lençoes as centers.

Geological formation.

The geological formation of the region is very interesting, and shows that at some time in the history of the world the mountains were thrown up a hot mass of stone, and the diamonds there found are the carbon, which, by great heat and pressure, crystallized. A considerable portion, for lack of proper conditions, failed to crystallize and is now encountered in hard, blackish masses of irregular shape, known in trade as carbon.

The original rock of the mountains is granite. In many places which I saw this occurs stratified, with a horizontal trend, or at most with a very slight dip, but it is frequently broken by gullies and deep, narrow crevasses, the latter reminding one of earthquake phenomena. Mixed with the granite is a sandstone of different degrees of hardness and a conglomerate composed of round water-washed pebbles with a very hard matrix. In some instances, the matrix is of a sandy character, but more frequently it resembles a dark-colored cement. The sandstone occurring beneath the surface is frequently soft, about the consistency of almost dry mud, and is capable of being easily crushed or even washed into sand by a strong current of water. Both the sandstone and the conglomerate are of recent formation as compared with the granite, and contain diamonds and carbons, showing that they were also of a more recent formation than the precious stones, which in fact are not found in situ, but are in their present position as the result of fluvial action.

Sandstone and conglomerate frequently fill the gullies, crevasses, and interstices beneath the layers of granite, but sometimes form strata in basins made by the granite and in other places appear with the granite as heterogeneous heaps of stone of different sizes, as if they had been collected and dumped into their present position, or as solitary eroded stones upon a layer of soil overlapping a stone base. The heaps of stone show that there has been an upheaval subsequent to the formation of the conglomerate and the sandstone, making a second or third geological upheaval of the district.

In all cases, the granite, sandstone, and conglomerate show the disintegrating action of weather, which in fact accounts for the peculiar way in which the diamonds and carbons are encountered and for the fact that large diamonds and carbons are frequently found in heaps of stone which were worked years ago and have since further disintegrated.

In this section, as has been said, the diamonds and carbons occur together in sandstone and conglomerate, but they can not be removed, except from the soft sandstone, because of the impracticability of breaking the rocks without crushing the precious stones, to say nothing of the expense which such a method would entail. Instead, the miners take advantage of the disintegrating effect of water and weather, and they work by removing the débris from the gullies between the rocks and the cavities under and around them, and this they wash for the diamonds and carbons.

The geological formation is such that often a gully or crevasse full of débris, which ages ago either disintegrated or was washed from a higher level, is so located as to be easily accessible; but again water or a hard ledge of stone will often be encountered, effectively shutting off deeper exploration, except at great labor and expense. For these reasons the most productive places have frequently to be abandoned, since it is usually the deeper portions of gulleys that contain the greater quantities of the desired stones, which, with the action of running water, seem to have gravitated to lower levels than the ordinary stones accompanying them.

The fall of the natural rivers and rivulets, and those streams temporarily created by rainfall, is so great that even quite large stones, to say nothing of the diamonds and carbons associated therewith, are washed to the river beds below and finally lodge under some projecting ledge, which prevents further movement. This action has been going on for ages, and is the reason why no diamonds and carbons are found in their original beds of formation, and also accounts for the fact that they were in a position to be included into the later-day rock formation, *i. e.*, the sandstone and conglomerate. For the same reason, the river beds are rich in precious stones, which can not be extracted advantageously, if at all, by the methods at present in vogue in the district.

In mining, the great desideratum is an abundant supply of water for washing the diamond and carbon bearing material, which consists of soil, sand, broken or disintegrated stone, etc., called "cascalho." In some sections, the water is obtained from the rivers before they descend the hillside and is conducted to the desired place through ditches and sluices, but in others the miners have to accumulate cascalho and wait for the rainy season and the streams created thereby to wash the result of their labor, while in still other sections there is no mining at all until the rainy season sets in, and those who have been working in the lower places and along the river are driven to the hillside, which is then a fertile region.

Method of mining.

The method of mining differs in the different sections. In the most productive one, the work is of two kinds: removing the surface disintegration and that in the gullies, crevasses, and beneath the more accessible stones, or mining by tunnels between the stones into the pockets of the mountains and taking out the cascalho found there. The cascalho is usually collected until toward the week's end, and is then laboriously washed, either by pouring the mass into sluices or ditches of running water and agitating it with a hoe or by placing small quantities in large wooden basins and washing it in nearby water. In the first instance, the object is to wash the soil and lighter particles away, arrangements being made to impede the heavier masses and consequently the diamonds and carbons. The part remaining is carefully washed in the large wooden basins, and the rocks picked over by hand. The miners are so accustomed to the appearance of the desired stones that in spite of the fact that there are ordinary stones which closely resemble them they can wash and finally sort a very large quantity of diamond-bearing material in a short time.

The other method of mining consists in diving to the bottom of the river bed and removing the silt, sand, gravel, etc., as far as the layer of clay or stone beneath. This system is carried on mostly in the Paraguaçu River, from a point midway between Bandeira de Mello and Andarahy to João Amaro. The center of this kind of work is near the village of Tamandoá. Here are located six diving machines, but at the time I was there, which was the proper season for mining, there was only one in operation, two men diving alternately and remaining about three hours below, putting the cascalho into sacks lowered from above. The sacks, when full, were elevated to canoes and taken on shore for washing.

Besides the machine divers, there are about twenty men who dive naked into the more shallow places, and this number is increased to about one hundred in the dry season, and to even a greater number when the periodical droughts arrive.

Labor conditions.

As in all mining regions, there are records of great finds with a small amount of work and records of a great amount of work with great privation and no finds. In general, the present conditions of the section are not such as to offer any encouragement for new miners who would work according to the present system, particularly for those who could not exist upon jerked beef, beans, and farina (manioc meal), the only available food, and could not live and work under all kinds of weather conditions, in a section rich in mosquitoes and subject to malarial fevers of the worst type.

It is true that there are perhaps as many as 5,000 people who work more or less in the mines, but they do not labor systematically, and endeavor to take out such cascalho as can be easily removed. Their only implements are a hoe, a crowbar, a hook-shaped piece of metal about two fingers in width and about 8 inches long, mounted on a pole 3 or 4 feet in length; sometimes a hammer and a hand drill; and two wooden basins, one of small size to carry the cascalho to the water's side and a large basin with which to wash. Now and then ordinary powder is used to assist in removing a refractory ledge of rock.

The miners have washed the sand down to the rivers, have covered up most productive river beds, and have piled gravel, broken stone, etc., upon sections that could easily have been mined with a little modern machinery, but will now necessitate considerable capital to prepare them for operation.

In my trip, which included the greater part of the diamond section and was sometimes over the worst stretches of road which I have ever seen, I could not find or hear of a person or company working with modern machinery or tools or using modern methods. In the home of the carbon, there was not even a hand-power rotary drill, much less a carbon set drill, which would frequently save days of work and much expense, by cutting holes to blast ledges of rocks that the cascalho below could be removed. Instead, men are employed who, with hand drill and hammer, make on an average three holes per day. This is even true of the French company, which leased a location known as "Mar de Espanha" and is preparing for the removal of the river from its present bed, though I understand that this company later on will introduce a turbine to furnish power for a few pumps with which to keep the water out.

There are most productive places which can not be worked, because the water seeps in faster than it can be bailed out, and other places which require constant bailing on the part of more than half a dozen men to keep them dry enough for one man to remove cascalho. With a good hand pump or two, the work could be performed better and more cheaply, and with power places now inaccéssible could be drained and explored.

State regulations.

According to law, all diamond and carbon bearing lands belong to the State. It is possible for a person of any nation to take out a claim by complying with the regulations. These require a claimant to make a general description in writing of the portion desired—which may be not more than 484,000 square meters (578,864 square yards) or less than 29,040 square meters (34,732 square yards)—and to file application for the same at the office of the director of diamond mines at Lençoes. If the portion selected has never been leased, notice of the sale of the parcel selected is published and thirty days thereafter it is put up at auction and sold to the highest bidder. If the claim has had a previous lease, the time for advertisement is reduced to ten days. A claim can be leased for from one to ten years and may be renewed ad libitum upon the payment of 50 per cent in advance of the auction price for the subsequent periods of renewal. There is usually no competition at the auctions.

At present there are 351 leased claims, and it is estimated that there are 450 other productive claims without lease.

For miners who care to work on lots without leases, there is issued a license which grants a privilege for a year; such a license costs about $1.50 in our money, including stamps.

Anyone mining without a license or lease subjects tools and such stones as may be found to confiscation, the State giving one-half of the value of the confiscated property to the informer.

In addition to the State fees, there is in each village a miners' tax of 10 milreis ($2.40) per miner.

Besides the claims leased in the regular way, there are various concessions which have been granted by the State to private parties and companies, but in all cases to Brazilians, except one concession to a French company at Cannavieiras, which section I have not visited. In the Paraguaçu region, there are six such concessions, which differ in size, but average about 9 square miles, and from which the State receives sums varying from 432 milreis ($105.68) to 8,000 milreis ($1,920) a year.

A few who have concessions or have leased claims do mining for their own account, paying the miners wages and keeping whatever is found; but most concessioners and lessees allow miners to work on their claims for from one-fifth to one-fourth of the value of the diamonds and carbons discovered. This method seems to be the more desirable, as miners working for their own account will labor harder than those employed by the day. There is little chance for fraud, as a good find soon gets noised about, and the buyers, knowing the miners and their claims, reserve the proper amount for the owner of the claim when the stones are presented for sale.

Methods of selling.

This district is the only place in the world where carbons are found in marketable size; the only other place where they have been found at all being in the Cannavieiras district. I have had frequent inquiries as to the cause of the comparative high price of carbons, and some of our large users have thought that a syndicate controlled the output and price. I have thoroughly investigated the matter on the ground, and find that there is no combination whatever among the miners, the buyers in the field, or the exporters at Bahia.

In each town of the mining district there are buyers who represent the five Bahia City firms which are in the carbon and diamond business. These buyers are furnished with large quantities of money, and are advised by each mail and frequently by special messenger as to the highest prices they can give, these prices being regulated by cable from abroad. While the prices in the main are even, there is often competition for a good specimen, and a miner usually goes the rounds and sells to the one offering the best price. Since the buying is in the hands of so few, it would seem to be easy to form a combine and regulate purchase prices, but instead each buyer seems to be suspicious of the others and works independently. The price is regulated abroad by the supply and demand, and in the mining region the price is a fair equivalent of the foreign offer, with the risk due to the fluctuations in Brazilian currency taken into consideration, though that does not make so great a difference as I had thought.

For example, carbons were at their highest price in the mining regions in 1899 and 1900, when 4,500 and 5,000 milreis ($810 to $900) were paid for 1 oitava (17½ carats); at that time the milreis had a value of from 16 to 18 cents. In 1894, with the value of the milreis at 20 cents, they were bought from the miners at from 20 to 22 milreis ($4 to $4.40) per carat, and in May, 1898, with the lowest value of the milreis—10 cents—110 to 112 milreis ($11 to $11.20) per carat was paid.

Carbons.

The output of carbons for the district now averages about 2,500 carats a month. Unless there are improvements in mining and modern methods and machinery are introduced, the output will undoubtedly decrease year by year, while the demand is constantly increasing. Immense quantities of carbons are there, but it will take well-directed companies with large capital to take them out, and there are little chances for small operators. With the abundance of accessible water power in the section, and with electrically run drills, pumps, and other machinery, there is fabulous wealth awaiting development.

Carbons are classified as porous or crystalline and good. The first variety is being bought from the miner to-day at half the price of the good stones, which are held at 100 milreis ($24) per carat if the stone is larger than three-fourths of a carat, and at 30 milreis ($7.20) per carat for stones of from one-half to three-fourths of a carat, with which are mixed globular diamonds. Carbons of less than half a carat are mixed with "refugo" diamonds, which are bought at 200 milreis ($48) an oitava. For very large carbons, the price is usually a small amount less per carat, as these have to be broken for the trade, and a percentage is deducted to make up for loss in breaking. Those of from 1 to 2 carats are most desirable, as they require no breaking. Not more than 5 per cent of the carbons found are of poor quality, the best stones coming from the region about Lençoes.

The largest carbon ever encountered was found in the Lençoes district in 1895 on the ledge of a mountain which had been worked some time before. It weighed 3,150 carats and was purchased from the miner for 80,000 milreis (at that time $16,000), one-fourth of the price going to the owner of the claim upon which it was found. This stone frequently changed hands, and was finally purchased by a Bahia City exporter for 121,000 milreis (then $25,400) and was shipped to Paris, where it was broken up into marketable pieces.

The next big find was in 1901, upon another claim of the same lessee. The carbon weighed 577 carats and was sold by the miner for 79,000 milreis (then $17,380), one-fourth part going to the lessee. The average size of the carbons encountered is 6 carats.

Diamonds.

The diamonds found in the Paraguaçu are not so clear and perfect as those about Cannavieiras, but are said to have more brilliancy. They occur in conjunction with the carbons, and many times contain small particles of uncrystallized carbon which materially lessen their value.

They are classified by the buyers at the mines into bons, fazenda fina, mellé, vitriar, and fundos.

Bons comprises stones of good color and form, and are purchased from the miners at from 800 to 850 milreis ($192 to $204) an oitava (17½ carats).

Fazenda fina means small stones of good quality and diverse colors, suitable for fine work requiring a mixture of colors. They are bought at from 750 to 780 milreis ($180 to $187.20) an oitava.

Mellé are the off-colored and imperfect stones which would otherwise be classed as "bons." They are bought at from 350 to 400 milreis ($84 to $96) an oitava.

Vitriar is a small stone full of luster and of good shape, but of diverse colors, weighing from 6 to 8 stones per one-fourth of a carat. It is bought for 12 milreis ($2.88) per one-fourth of a carat.

Fundos are small, imperfect, and badly colored or broken stones, more suitable for the trades than for jewelry, including carbons of less than one-half a carat. This mixture is bought at from 180 to 200 milreis ($43.20 to $48) an oitava.

The prices given are those at the mines, and when the milreis was worth 24 cents. The milreis price had just been lowered, because the milreis had at that time advanced in value, while the foreign price of stones had remained practically stationary. To the prices given should be added the cost of transportation, which is always by special messenger, and the Bahia City dealers' profit, in order to get the export price in Bahia City, and to this should be added export duty, freight, and insurance, to get the net cost at Paris or London.

So far as I can find, the largest diamond found in this section in recent years was one weighing 11 carats, but it was of such a bad shape that it gave only 4½ carats cut, and was bought in the rough for 2,400 milreis (then $480). Many smaller stones, when cut, have yielded better than this one.

In a parcel of rough stones which I was shown at Santa Isabel, there was not one stone of 5 carats in 56 oitavas (980 carats), the largest being 3½ carats and the average about 1 carat. Seventy per cent were classified as good, though small, and 30 per cent were bad, or fundos. I was told that that was a fair average of the section, and so it proved to be with larger parcels of stone examined at Andarahy and Lençoes.

CANNAVIEIRAS DISTRICT.

As to the Cannavieiras district, I can not speak from observation or personal investigation. I have been told that diamonds were discovered there in 1881 ; that the region is reached from Cannavieiras—on the coast south of Bahia City—by ascending the Prado River 56 miles in canoes to Jacarandá, and from there taking mules to Salobra, 12 miles higher up the same river. The diamonds are said to be found only in the river bed and the land directly adjacent thereto. No work has been done at any distance away from the river, on account of the lack of water with which to wash.

Four State concessions of about 9 square miles have been granted in this section, one being in the hands of a French company. In addition, three claims have been leased.

OUTPUT IN BAHIA.

It is impossible to state with definiteness the diamond and carbon output of the Bahia district, as no statistics are available, and not even the figures given for the exports can be taken as correct. There is an export tax of 13 per cent, and many stones must leave the country without paying duty, as the amount given as collected for diamonds and carbons is not equal to the carbon output alone, and all the carbons are exported.

With the present financial crisis, almost all of the diamonds are being exported uncut, as there is no local market for cut stones and the work is not sufficiently well done here to make them salable abroad. In the diamond regions, there are several factories for cutting and one is also located in Bahia City.

All diamonds and carbons from this section are shipped to Paris and London. The largest local house has its head office in Paris, and its buyers at the mines have an interest in the business. The other houses either sell direct to large European dealers or have firms to which they consign.

Though the United States is a large consumer of carbons, our dealers have always bought in Europe and seem to be content to continue to do so, as there they can make selection or at least get the carbons of the approximate weight desired, though paying a considerable advance in price for the privilege. Selection as to weight, etc., would be impossible here, as the local dealers insist on selling an assortment, and as long as they can do so in dealing with Europe they will take no chances by changing their business methods.

H. W. Furniss,
Consul.

Bahia, *June 23, 1902.*

CONVENTION OF SUGAR PRODUCERS OF BRAZIL.

Pursuant to a call issued by the National Society of Agriculture at Rio de Janeiro, delegates assembled here on June 25, 1902, to take part in the first sugar producers' convention of Brazil.

Delegates were present from all the sugar-producing States—Sao Paulo, Rio de Janeiro, Pernambuco, Bahia, Parahiba, Alagoas, Sergipe, Rio Grande do Norte, and Maranhão. They were not sent according to any basis of apportionment, but were designated by the various agricultural and commercial societies, municipalities, State governments, groups of cane raisers, and sugar producers.

The national society had planned an elaborate programme, to include the discussion of such subjects as symptoms of the sugar crisis, its causes and remedy; condition and preparation of the soil and qualities of cane cultivated; methods of culture; methods of sugar making; production; foreign trade; internal trade and means of enlarging it; production and consumption of alcohol, its industrial application for light and heat, its use as fuel for large factories; use of sugar cane for feeding stock.

The subjects were not assigned to delegates, but it was left to the individuals to take whatever part they might wish; and instead of discussing the points outlined on the programme, the convention virtually narrowed down to considering various plans which were proposed to better the condition of those engaged in sugar production. These plans included federal loans to planters; abolition of tax for foreign export and payment of bounty for sugar so sent; a consumption tax on all sugars, the revenue so derived to reimburse the States for the export taxes removed and the bounty established; the storing of sugar by the Government and the sale of same without the intervention of the middleman; etc.

After a week of discussion, it became apparent that the interests of the delegates were so diverse that it would be impossible to come to any definite conclusion, and the convention adjourned on July 4, to meet in February, 1904, at Pernambuco. The only thing accomplished was the adoption of a motion to the effect that interstate duties should be abolished and protesting against the high rates of taxation in general.

H. W. Furniss,
Consul.

Bahia, *July 5, 1902.*

RUBBER EXPORTS FROM PARA.

According to the final returns, the shipments of rubber from the Amazon Valley this season amounted to 29,997 tons, or 2,317 tons more than in 1900–1901.

In the season just begun, it is believed that a record-breaking crop will be harvested. The rubber fields of the lower river, and especially on the islands, are slowly but surely failing, both in quantity and quality; but the decrease is more than made up by the development of new fields and the expansion of the old fields on the Upper Amazon. While all the more important tributaries of the Amazon are supplying their full quota of rubber, and even making a promising increase, interest will focus in the now famous Acre territory and in southeastern Ecuador. In the regions reached by the Purus (of which the Acre is a tributary), Jurua, Beni, Madre de Dios, Javari, Ucayali, Japura, and other great affluents of the Upper Amazon, which penetrate Peru, Bolivia, and Ecuador, there are illimitable rubber forests as yet unexplored, which will now be gradually developed. Many seringueiros, or rubber gatherers, are headed for these regions, and it is reported that several syndicates are about to begin operations in new fields in Bolivia and Peru.

Bolivia continues to offer inducements for the colonization and development of her vast area of rich rubber and mining territory.

I am informed that the government of the State of Amazonas has granted the exclusive privilege of receiving, cutting, and packing all the rubber produced in that State to one wharf company. The creation of this monopoly will injure the rubber trade of this region, but Peru, Bolivia, and Ecuador will be the beneficiaries, as rubber growers and gatherers here are seeking to escape the new restrictions, which entail considerable expense and trouble upon exporters.

I append tables showing in detail the shipments of rubber from this valley during the season closed June 30, 1902, for which I am indebted to Mr. J. A. Mendes, general manager for the house of Adelbert H. Alden, of New York; also a comparative table showing the gradual and steady increase in the rubber trade during the past six years.

K. K. KENNEDAY,
Consul.

PARA, *July 7, 1902.*

Shipments from Para from July 1, 1901, to June 30, 1902.

Shippers.	To United States.	To Europe.	Total.
	Tons.	*Tons.*	*Tons.*
Adelbert H. Alden	3,102	1,057	4,159
Frank da Costa & Co	2,486	1,658	4,144
Cmok, Prusse & Co	894	2,174	3,069
Neale & Staats	118	664	782
Denis, Crouan & Co	78	579	656
R. Suarez & Co	3	291	295
Kanthack & Co	15	232	247
S. Brocklehurst & Co	....	200	200
Sears Para Rubber Co	162	....	162
Pires, Teixeira & Co	21	38	59
Rud. Zietz	6	31	37
Sundry shippers	13	102	115
Total	6,898	7,027	13,925

Shipments from Manaos and Iquitos from July 1, 1901, to June 30, 1902.

Shippers.	To United States.	To Europe.	Total.
	Tons.	*Tons.*	*Tons.*
Prusse Dusendschon & Co	2,040	2,435	4,475
Witt & Co	1,992	1,275	3,266
Adelbert H. Alden	1,899	433	2,332
Sears Para Rubber Co	669	....	669
J. H. Andresen Succrs	19	631	650
Neale & Staats	10	627	637
B. A. Antunes & Co	141	403	545
S. Brocklehurst & Co	56	350	405
Marius & Levy	11	315	326
Mello & Co	113	199	312
Kahn, Polack & Co	....	199	199
Denis, Crouan & Co	....	130	130
Reeks & Astlett	125	....	125
Luiz Schille Sobrinhos	....	87	87
Morey & Aquila	....	76	76
Barros & Levy	....	72	72
J. A. de Freitas	....	43	43
Sundry shippers	92	225	317
Direct from Iquitos	....	1,404	1,404
Total	7,168	8,904	16,072

Shipments from Para, Manaos, and Iquitos from July 1, 1901, to June 30, 1902.

Shippers.	To United States.	To Europe.	Total.
	Tons.	*Tons.*	*Tons.*
Cmok, Prusse & Co	2,935	4,609	7,544
Frank da Costa & Co	4,478	2,933	7,411
Adelbert H. Alden	5,002	1,490	6,492
Neale & Staats	128	1,290	1,419
Sears Para Rubber Co	831	....	831
Denis, Crouan & Co	78	708	786

Shipments from Para, Manaos, and Iquitos, etc.—Continued.

Shippers.	To United States.	To Europe.	Total.
	Tons.	*Tons.*	*Tons.*
J. H. Andresen Succrs	19	631	650
S. Brocklehurst & Co	56	550	606
B. A. Antunes & Co	141	403	545
Marius & Levy	11	315	326
Mello & Co	113	199	312
R. Suarez & Co	3	291	295
Kanthack & Co	15	232	247
Kahn, Polack & Co		199	199
Reeks & Astlett	125		125
Luiz Schille Sobrinhos		87	87
Morey & Aquila		76	76
Barros & Levy		72	72
Pires Teixeira & Co	21	38	59
J. A. de Freitas		43	43
Rud. Zietz	6	31	37
Sundry shippers	105	327	432
Direct from Iquitos		1,404	1,404
Total	14,066	15,931	29,997

Résumé.

Direct from—	Shipments to—		Total.
	United States.	Europe.	
	Tons.	*Tons.*	*Tons.*
Manaos	7,168	7,450	14,668
Para	6,898	7,027	13,925
Iquitos		1,404	1,404
Total	14,066	15,931	29,997

Total of crop from July 1, 1901, to June 30, 1902, 29,997 tons; increase over crop of 1900–1901, 8.39 per cent.

Shipments of rubber from the Amazon Valley for the seasons of 1896–97 to 1901–2, inclusive.

Year.	To United States.	To Europe.	Total.
	Tons.	*Tons.*	*Tons.*
1896–97	9,848	12,368	22,216
1897–98	11,422	10,796	22,218
1898–99	12,398	12,848	25,246
1899–1900	12,474	14,407	26,881
1900–1901	15,194	12,486	27,680
1901–2	14,066	15,930	29,997

BALATA GUM IN BRAZIL.

The attention of interested parties in the United States has recently been directed to the possibilities of the balata fields on the Amazon. James A. Bouty, for many years a gutta-percha operator in the Guianas, on a trip of investigation through this region about one year ago, found the balata tree growing in abundance near Para and on the Amazon and its tributaries for thousands of miles. The Brazilians had no knowledge of its gum-producing qualities. After persistent effort Mr. Bouty succeeded in interesting parties in the United States and Para, bought a concession, and has lately begun the practical work of producing gutta-percha for the market. Sufficient time has not yet elapsed to demonstrate the commercial value of Mr. Bouty's personal experiment, but his work has served to open up a new industry for Brazil, which may develop into large proportions. As in the case of rubber, there is practically no limit to the supply of gutta-percha on the Amazon, and, as it can be produced at a fraction of the cost of rubber, it offers a much higher percentage of profit.

I give below a report on this subject from Mr. William Gerdeau, who has had a practical experience of many years in the Guianas, where he represented American and English gutta-percha importers and managed balata estates:

Pursuant to your request, I submit the following report of my personal investigations of the balata fields of Brazil during my recent explorations of this region:

The balata, or bulle tree (*Minsaps balata*), known in the Brazilian language as the macaranduba, grows in great abundance throughout the Amazon Valley, but up to this time no attempt has ever been made to introduce the gutta-percha trade in this country.

For more than thirty years, this trade has been carried on with immensely profitable results in the Guianas and the Orinoco Valley, but those fields are now almost exhausted and very little gutta-percha has recently been shipped.

It is my opinion that this balata trade can be made to rival the rubber trade in this country, as it can be produced here in unlimited quantities, and its quality is, if not better, at least as good as the Guiana balata.

I have found the balata trees scattered and in groves, sometimes amounting to forests many miles in extent, all over the States of Para and Amazonas, and I am informed on trustworthy authority that vast areas of these trees are growing on the Purus and Acre rivers and other tributaries of the Upper Amazon River.

The method of bleeding the balata tree is entirely different from that used to extract the gum of the rubber tree, and only experienced and expert bleeders can be employed. But, on the other hand, these trees yield many times as much sap as the rubber trees, and one man can easily produce as many kilograms of gutta-percha in a day as twenty men can extract of rubber. The trees will average 3½ pounds of gutta-percha each, and a competent bleeder can prepare 40 to 50 pounds per day. The gum is first fermented and then dried in the sun, after which it is ready for shipment.

I am surprised to find that this valuable gum, which is so easy of access and so cheaply prepared for market, has never become known to the trade here. Many great fortunes have been made in Guiana from this trade, and I believe the time is now ripe for American capital to develop the trade here. I found the Brazilians cutting down these valuable trees for firewood and building material, being ignorant of their true properties.

Concessions of balata fields of any extent can readily be secured from the Brazilian Government, and private balata lands can be purchased for a fair price. It only requires some capital and practical knowledge of the business to develop one of the greatest industries in Brazil.

K. K. KENNEDAY,
Consul.

PARA, *July 15, 1902.*

BRAZILIAN COFFEE CROP.

I give below the authentic figures of coffee production for the harvest year closed on June 30, 1902. They are:

	Bags.*
Received in the port of Rio	4,971,686
Received in the port of Santos	10,149,327
Total in the two ports	15,121,013

The receipts of the other ports (Victoria, Bahia, Pernambuco, etc.) will be sufficient to make up a total of 16,000,000 bags.

The present harvest, the marketing of which commenced on July 1 of this year, may be estimated at 10,000,000 bags.

The bears, of course, send out circulars to prove that the harvest will be much less than this quantity, and the bulls are not less energetic in the attempt to prove that the harvest will be a great deal more. At present, there are no figures obtainable which are absolutely reliable.

Coffee is now the subject of very active speculation, and prices, low as they are, are to a great extent upheld by speculators. The visible supplies in Europe, as well as in the United States, are more than sufficient to cover a year's consumption. If the new crop (the harvest of 1903), which will be in bloom about the end of October and then be susceptible of estimates, should turn out, as is likely, to be a good one, a considerable decrease in the prices seems inevitable. This would naturally bring about a decrease in exchange and in the irredeemable Brazilian paper currency.

EUGENE SEEGER,
Consul-General.

RIO DE JANEIRO, *July 17, 1902.*

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* Of 60 kilograms (132 pounds).

BRAZILIAN NUT AND CACAO CROPS.

The Brazilian nut crop for 1902 is nearly all in the hands of the dealers or in transit from the fields, and an accurate estimate of the total can be made. The crop is nearly double the combined output of the two previous years. The quality has also been unusually good, and the supply has been so judiciously handled that there has been neither a glut nor a shortage in the market during the season. Prices have ruled firm throughout, and at no time has any stock accumulated. The demand from the United States increases steadily. In 1900, the United States took 44 per cent of the crop and Europe the remainder; in 1901, we took 50 per cent of the crop; this year our purchases amounted to 55 per cent.

The total shipments of nuts from the Amazon up to date have been 6,871 tons, of which Manaos shipped 3,778 tons and Para 3,093 tons. The most conservative estimates of the remainder of the crop place it at about 300 tons, thus making a total for the crop of 1902 of about 7,200 tons. The crop of 1900 was 2,514 tons; that of 1901, 2,808 tons.

THE CACAO CROP.

The cacao market has been steady at average prices, and the demand fully equal to the supply. No crop in this country is subject to such fluctuations as cacao, and for this reason comparisons with previous crops are valueless. Little interest is manifested in the product in this region.

The total shipments from the Amazon for 1902 have been:

	Tons.
January	314
February	310
March	409
April	408
May	562
June	587
July	300
Total	2,890

Something more than one-third has been taken by the United States and the balance by Europe. France, as usual, is the largest consumer, with Holland second. The trade with the United States is, however, increasing, and before long we shall doubtless consume the bulk of the cacao product of South America.

K. K. KENNEDAY,
Consul.

PARA, *July 15, 1902.*
No 265—02——2

DEVELOPMENT OF INDUSTRIAL INTERESTS IN CHILE.

From the earliest history of the Republic to the present time, the energies of the Chilean people have been devoted largely to agricultural and horticultural pursuits, stock raising, and mining. The conditions of soil and climate and the natural resources of the country have encouraged the people to interest themselves in these lines rather than in industrial occupations. The result is that there are few large manufactories in the country, the majority of the manufactured articles required being imported.

But there is at the present time an activity in industrial lines that promises to work a radical change in these conditions and to build up in the near future numerous and varied manufacturing interests. This activity is due to several causes, first of which is the fact that there is a high tariff imposed upon nearly every manufactured article imported into Chile. Another reason is that in recent years large financial interests have been acquired in the country by foreigners, and the prospective profits on the products of local industries is encouraging capital to seek investment in mills and factories.

COTTON-FABRIC INDUSTRY.

One of the new concerns, and one of the most important in Chile, is the plant of the Chilean Mills Company, Limited, at Chiguyanti, in the province of Concepcion, which began operations on the 7th of the present month. The factory consists of a bleaching and dyeing works and a fabric department with 60 looms. The plant is equipped with the latest processes for bleaching and dyeing, and the looms and all other machinery are of the most approved patterns. The buildings are frame structures with stone foundations and cover an area of 5 acres. The company now employs 200 hands, which number will be increased to 600 or 800 when the plant is operated to its full capacity. The first object of the works is to bleach and dye and possibly print imported cloths, and, secondly, to manufacture gray calico, which will be subsequently treated at the works; also to manufacture oxfords, striped drills, etc.

Some of the first products of this mill, which I have examined, compare favorably with those produced in old established factories. All of the cotton goods hitherto used in Chile have been imported, paying a high duty, but as the new company can import drugs and yarns duty free, a ready market should be found for all of its products in the country; and the demand, at ruling prices, assures the success of the enterprise.

This company is operating under a franchise granted by the Chilean Government, which gives it a monopoly of the business in the country for a term of ten years. A condition of this franchise is that the company expend in the plant and equipment, within two years from the time of granting the monopoly, £125,000 ($625,000).

Skilled workmen and operators have been imported to superintend the various branches of the establishment, but it is the intention of the company to employ Chilean workmen in most of the departments and as loom operators, as soon as a sufficient number can be trained to the work.

The enterprise was promoted by Mr. George Allardice, of the firm of Allardice & Co., of Valparaiso, Santiago, and Concepcion, who is also a director in the new company. The Chilean Mills Company, Limited, is controlled by English capital.

This mill will open up a market in Chile for large supplies of cotton materials, such as yarns and gray cloths, gray drills, sheetings, cotton flannels, etc., which will be a matter of general interest to cotton exporters of the United States. It is not the intention of the company to spin any yarns for use in the works.

BRANCH PLANT OF THE DIAMOND MATCH COMPANY.

Another factory of much importance, now in course of construction, which will be ready for operation about November next, is a branch of the Diamond Match Company of the United States, located at Vina del Mar, a suburb of Valparaiso.

The factory buildings are the most substantial structures of the kind in Chile; it may be added also that they were completed within half the time that it usually takes to erect similar buildings in this country. The construction was superintended by an American. They are on stone foundations, with basement and brick superstructures, one story high, and with galvanized-iron roof. The main building is 204 by 76 feet, with three wings adjoining, each 100 by 50 feet. All the materials used in the construction of the buildings (except the timbers, which are Oregon pine) are of Chilean production. The factory, which is what is known as a slow-burning structure, is equipped with facilities for regulating the temperature in every department with hot and cold air; it is also supplied with an electric-lighting plant and with an automatic-sprinkling system for extinguishing fires, with a capacity of 750 gallons of water per minute.

The mechanical equipment consists of a battery of Sterling boilers with a capacity of 250 horsepower each, one Buckeye engine of 150 horsepower, one 8 by 12 straight-line engine for propelling the fans, and six wooden match and one book or paper match machines. All the machinery, which comes from the United States, represents the latest improvements in this line. The buildings will accommodate three more match machines, which will be added within the year.

The aggregate cost of the plant is $150,000. Fifty-one per cent of the stock is owned by the Diamond Match Company in the United States and the other 49 per cent by English residents of Valparaiso and by Chileans. The president of the local company is T. H. McClellan, of Valparaiso. The factory will have a capacity of 3,000 gross boxes of matches per day, and will employ at the beginning 250 hands. It is estimated that the consumption of matches in Chile is 800,000 gross boxes per year. There is a duty of 20 per cent on all matches imported into the country.

The wood from which the matches are made will be imported from the United States. The company will operate a printing plant in connection with the factory, in which will be prepared all the labels and advertising matter used in the business. The enterprise will be under the management of local stockholders, and the entire output of the factory will be handled by a Valparaiso house.

The Diamond Match Company now has plants, similar to the one erected here, in operation in Callao, Peru; Buenos Ayres, Argentine Republic; and Rio de Janeiro, Brazil.

R. E. MANSFIELD,
Consul.

VALPARAISO, *July 12, 1902.*

AMERICAN DRUGS AND DRUGGISTS' SUPPLIES IN CHILE.

Most of the crude drugs imported into Chile come from England and Germany. Dealers claim that the American products are too high in original cost and in expense of transportation.

Nearly all tinctures and fluid extracts are made in Chile, on account of the cheapness of alcohol. A large per cent of the compound drugs used in this country are of London make, but considerable quantities are compressed by the local druggists. The tendency is to manufacture everything possible in the way of drugs in the country, so as to secure greater profits and at the same time supply the trade at reasonable prices, as a majority of the people are very poor and economy is a necessary consideration.

Patent medicines of American origin, generally considered, are in very good demand; but this demand can be maintained only by constant and judicious advertising.

The consumption of chemicals in Chile is increasing, on account of the advance of industrial interest and the growth of manufactories; but very little of the present supply comes from the United

States, in comparison with what is imported from Germany. Sulphuric acid mostly comes from Germany; soda and its salts, from England.

American drug sundries have considerable consumption in Chile, especially rubber goods and hose. Most of the glassware used in the drug business in this country is of German, French, and English origin, the importance of the importations being in the order named. The glassware that comes from the United States is heavier, and consequently dearer, duties being paid on weight. The market in Valparaiso in this line of goods is practically controlled by one or two houses.

Drug-store fixtures are mostly manufactured in the country. There are many good woods and very good workmen in this line in Chile. The duties on furniture make the importation of that article practically prohibitory.

Soda fountains are very rare in Chile. There is but one now in use in the city of Valparaiso, and Messrs. Griffith & Co., who have it in their drug store, inform me that it is practically valueless, as there is no demand for soda water here.

There is a constant demand for fancy soaps of well-known brands; also for perfumes and toilet waters of high grades. A considerable per cent of this trade goes to the United States.

American surgical appliances, more especially rubber plasters, are largely used in Chile.

The majority of photographic and optical goods used here come from Germany, France, and England, in the order named; but in photographic supplies, especially, the United States is becoming a strong competitor.

Foods and alimentary products used in Chile come largely from England and are of the patent variety, though Germany sends some of this class. Large quantities of canned goods and preserved and cured meats of United States manufacture are consumed in the Chilean market.

Artificial limbs are mostly manufactured in the country—in a small way, however, as the demand for such articles is practically nil. The poorer classes are content with the crudest apologies for artificial limbs, on account of the high price of the better articles.

Toilet and bathroom articles are mostly imported from Europe, but bathroom fittings come from the United States.

Much of the paint and oil comes from the United States, especially in the lighter grades, but the heavier lead and zinc paint materials come from England.

To sum up trade conditions in Chile briefly, it may be said that it is a cosmopolitan country, where the products of nearly all the industrial nations may be found. The drawback to extensive trade in general is found in the fact that it is a limited market, due to the small population, the unstable financial conditions, and the indefinite credits that are granted.

R. E. Mansfield,
Consul.

Valparaiso, *July 12, 1902.*

TRINIDAD SUGAR INDUSTRY.

Under date of July 11, 1902, Consul Alvin Smith transmits an excerpt from a statement by the attorney-general, in regard to the sugar industry in Trinidad and the necessity for legislative action, which reads:

> The following figures were not, by any means, taken at random. The net loss per ton of sugar sustained by planters in the colony during the last crop was £2 14s. ($12.65), on the basis of sugar at 13s. 9d. ($3.35). There were 60,000 tons of sugar exported, which meant a loss of £160,000 ($778,640). The secretary of state had intimated his intention to assist them by putting at the disposal of the government a sum estimated at £41,000 ($199,527), to be applied in such a manner as the government might think expedient. It was proposed to appropriate that sum in two ways—in the main, to refund to the planters the amount which could be calculated to have been paid by way of immigration tax during the last two years. It was at first proposed to give assistance by installments of 1s. (24.3 cents) per acre per month. That proposition had been withdrawn and another substituted, under which perceptible amounts could be advanced. The extent to which any employment of the funds of the colony would be at present sanctioned was £50,000 ($243,325). Any advance made out of this sum should be by way of loan, and should be a first charge on all estates to which the advances were made. A further condition was that the credit of the colony should not be used to provide funds for the planters, except it were proven to the satisfaction of the government that such planters were unable to obtain the necessary funds for the cultivation of their crops from any other source whatever. Therefore, the conditions as to loans would apply to a comparatively small proportion of the estates of the colony, many of the owners of estates being in a position to carry on the industry if they felt sufficient confidence in its future.

IMPORTS AND EXPORTS OF PUERTO CABELLO.

Consul L. T. Ellsworth sends from Puerto Cabello statements of the quantities and value of the imports and exports of that consular district and its agency (Valencia) for the six months ended June 30, 1902, as follows:

Imports of Puerto Cabello and Valencia for the six months ended June 30, 1902.

Article.	United States.	Germany.	France.	England.	Spain.	Holland.	Italy.	Total.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Agricultural implements	2,413	27,044	598	43,509		1,738		75,302
Acetic acid	374	3,414						3,788
Bran	580							580
Brewing supplies				50				50
Blacking	330							330
Bottles	1,931	1,625		930	15	1,542		6,043
Books	233	508	77					818
Barley		2,798						2,798
Beer	99	91,495		41,038				132,632
Butter	76,131	56,947				1,518	55	134,651
Bluing	765	2,466						3,231
Brown linen		12,119		10,441				22,560
Carts, hand	345							345
Canary seed		5,478	811		695			6,984
Canned goods	2,943	3,557	2,382	1,051	88		994	11,015
Cinnamon bark	8,661							8,661
Creolene		3,852						3,852
Confectionery	1,562	2,796	1,216	2,752	908			9,234
Cement		108,636		118,800		19,800		247,236
Coal (private use)		12,276						12,276
Cigarettes, Cuban	365							365
Crackers	23,247	14,187		433	294			38,161
Cornstarch	6,844							6,844
Candles	5,783	798						6,581
Cereals	961							961
Cordage	1,419	600			2,519		1,075	5,613
Cheese	310	2,923	1,139	41	763	27,253	1,273	33,702
Demijohns		4,428						4,428
Dry goods	187,156	150,257	22,000	494,296	10,133	46,466	*4,545	914,853
Drugs and medicines	6,476	24,090	4,912	693	132		145	36,448
Disinfectant for hides		11,459						11,459

* Belgian.

Imports of Puerto Cabello and Valencia for the six months ended June 30, 1902—Continued.

Article.	United States.	Germany.	France.	England.	Spain.	Holland.	Italy.	Total.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Twine		9,774					1,282	11,056
Toys	125	44	96					265
Tea		55		28				83
Thread	2,035	638	576	2,120				5,369
Vinegar		297	1,916		90			2,303
Vegetables		26	182		1,320			1,528
Vermicelli	3,654							3,654
Water, mineral		17,690	3,110	50	308		3,168	24,326
Wire, barbed	77,022							77,022
Wines		3,680	21,940	589	400,000		31,697	457,906
Total	3,143,773	1,840,070	153,942	879,758	485,562	264,522	128,587	6,896,214
Total value	$126,653.27	$120,049.42	$26,169.61	$143,124.80	$32,185.77	$21,609.42	$8,511.15	$478,303.44

Exports of Puerto Cabello and Valencia for the six months ended June 30, 1902.

Article.	United States.	France.	Germany.	England.	Cuba.	Holland.	Spain.	Italy.	Total.	Value.
Bags .... pounds	....	....	....	....	....	14,300	....	....	14,300	$1,000.00
Coffee .... do	831,363	6,042,194	1,297,428	....	....	466,811	752,978	177,925	9,568,699	664,166.39
Cocoa .... do	101,970	1,085,605	70,039	78,432	....	....	122,482	340	1,458,868	915,624.30
Corn .... do	29,326	....	....	....	....	....	....	....	29,326	265.66
Copra .... do	....	56,086	25,682	....	....	19,269	....	....	101,037	2,065.00
Cotton .... do	....	....	....	14,044	....	....	....	....	14,044	1,400.00
Copper, old .... do	....	1,320	4,325	....	....	....	1,675	1,155	8,475	466.00
Divi-divi .... do	....	....	....	....	....	121,440	....	27,820	149,260	1,574.00
Hides:										
Deer .... do	19,714	253	....	....	....	....	....	....	19,967	4,408.08
Goat .... do	45,611	71,870	....	....	....	615	....	....	118,096	24,030.99
Ox .... do	528,967	....	....	....	....	8,350	....	....	537,317	86,361.67
Horns .... do	....	2,050	4,420	....	....	....	....	2,000	8,470	605.00
Miscellaneous .... do	....	1,585	12,090	....	....	6,255	....	6,465	26,395	1,783.00
Products of cane .... do	....	....	....	....	....	14,375	....	....	14,375	480.00
Quinine .... do	....	1,475	....	....	....	....	....	....	1,475	118.00
Woods, timber .... do	....	29,670	584,815	....	....	....	....	....	614,485	3,226.00
Total	1,556,951	7,292,108	1,998,799	92,476	....	651,415	877,135	215,705	12,684,589	1,007,574.09
Cattle .... head	....	....	....	....	1,707	5,095	....	....	6,802	51,231.70
Cocoanuts, dried .... number	....	....	....	....	....	1,300	....	....	1,300	35.00
Shells .... boxes	4	....	....	....	....	....	....	....	4	37.83
Total value	$194,699.92	$590,383.00	$98,417.00	$12,036.00	$45,957.70	$38,229.00	$63,746.00	$15,410.00	....	1,058,878.62

TARIFF ON WINES AND LIQUORS IN COSTA RICA.

A law recently promulgated by the Government of Costa Rica makes certain changes in the rates of import duties on wines and liquors. A translation follows:

ARTICLE I. From and including the 10th day of the present month (July) the following articles will pay duties at the following rates, gross weight in each case:

Article.	Unit.	Duty.	
Red wines for table, containing not more than 10 per cent of alcohol:		*Colons.*	
In bottles	Kilogram[*]	0.05	$0.03⅓
In demijohns or barrels	do	.12	.05½
White wines (not sparkling) and generous wines, dry or sweet, containing not more than 15 per cent of alcohol:			
In bottles	do	.15	.07
In demijohns or barrels	do	.30	.14
Red and white wines (with exception of sparkling), dry or sweet, when they contain in addition other aromatic vegetals, as wines called vermuth, blackberry wine, Mirtillo, and others, containing not more than 15 per cent of alcohol:			
In bottles	do	.20	.093
In demijohns or barrels	do	.40	.186
For each 1 per cent of excess of alcohol above the maximum named for wines in the foregoing sections, provided it does not exceed 20 per cent,[†] there shall be collected an additional duty of 0.008 colon (three-eighths of 1 cent) per kilogram gross weight on wines in bottles, and of 0.023 colon (1.1 cents) on wines in other receptacles (demijohns or barrels).			
Sparkling wines, as champagne and Moselle, of whatever grade	do	1.50	.69¾
In this section cider wine shall be considered as included.			
Liquors, brandies, rum, gin, whisky, and other spirituous beverages which contain not more than 60 per cent of alcohol:			
In bottles	do	1.20	.558
In demijohns or barrels	do	2.40	1.116
For each 1 per cent of alcohol in excess which the beverages named in the last section shall contain, an additional duty shall be collected in the following manner:			
Liquors, etc.—			
In bottles	do	.02	.009
In barrels or demijohns	do	.05	.02⅓

[*] 2.2046 pounds.

[†] Total strength of alcohol not to exceed 20 per cent.

ART. 2. By brandy is understood the spirituous product obtained by distillation of the fermented juices of fruits, grains, or other saccharine substances.

For purposes of assessment, there shall be considered as brandies all wines and juices, more or less spirituous, which contain more than 20 per cent of alcohol.

The strength of the alcohol shall be determined either by means of distillation or by means of the alcoholometer of Gay Lussac, with the corresponding decrease or increase, according as the temperature rises above or falls below 15° C. (59° F.).

For reduction to the standard of 15° C., when the observation is taken at a higher temperature, three-tenths of an alcoholic grade for each thermometric grade above 15° shall be deducted, or the same added when the temperature falls below 15°.

The brandies included in this section are not to contain medicinal substances, sirups, aromas for toilet use, or essences of fruits.

All alcoholic beverages shall be considered as liquors which, either by crushing or distillation of seeds, bark, fruits, or aromatic plants, or by simple dissolution of their essential oils or juices, retain the aroma of those vegetals, as well as a very sweet taste due to the sirup which enters into their preparation.

ART. 3. The foregoing rates are not subject to the 50 per cent increase established by the law of April 27, 1901.

JOHN C. CALDWELL,
Consul.

SAN JOSÉ, *July 10, 1902.*

TARIFF ON FURNITURE IN COSTA RICA.

A recent decree makes certain changes in the import duties on furniture, as shown below:

ARTICLE 1. From the publication of this law (July 7), the following articles shall pay duty at the following rates:

Article.	Unit.	Duty.	
		Colons.	*Cents.*
(*a*) Furniture of ordinary wood, not veneered with leaf of fine wood, simply wrought, with neither carvings nor turned pieces, backs nor other pieces, curved or doubled by steam, without mirrors, although they may have cane seats	Kilogram*	0.25	11⅝
(*b*) Furniture of ordinary wood, veneered, or the body of fine wood, even when either may have pieces curved or turned and cane seats, with or without mirrors, always provided they are not upholstered	do	.45	20.9
(*c*) Furniture of wood upholstered with skin or cloth which does not contain silk, even when they have a single band or fringe of silk, always provided the body of the upholstering, properly, contains no silk	do	.60	27.9
(*d*) Furniture of wood, when upholstered with silk, or with cloth containing silk	do	.75	34⅞
(*e*) Furniture of all kinds and materials, inlaid with wood, shell, ivory, tortoise shell, or metal	do	1.00	46.5
(*f*) Furniture of bent wood, known by name of Vienna furniture, and that of osier or cane (Chinese style)	do	.51	23.7
(*g*) Brooms of osier, rush, cane, or other vegetable fiber	do	.30	13.9
(*h*) Tallow, for soap	do	.02	.9
Soda caustica	do	.02	.9
Rosin	do	.01	.46

* 2.2046 pounds.

ART. 2. The inlaid work referred to in section *e* of article 1 is that which constitutes the most delicate of cabinet work, by which is understood furniture with incrustations of celluloid, coral, mosaic of onyx, wood or paste, etc., and there are not to be considered as included in said section *e* furniture having an inlaid plaque, drawers, or keyholes, nor furniture with ornaments of ordinary metal superimposed in manner of molds, rose work, or carvings.

ART. 3. Mirrors which form part of a piece of furniture are those which, being an integral part, can not be separated from the piece without leaving it incomplete; therefore, there should not be considered as a part of pieces of furniture those mirrors which, like those which are placed upon a side table, in no way adhere to it and may be used completely separate.

ART. 4. The woods which, in reference to furniture, this law considers as fine are mahogany, ebony, "granadillo," jasmine, walnut, "palisandro" or "palo santo," rosewood, "rodino," "tuya," and "gateado."

ART. 5. The foregoing rates will not apply to those articles which are in the custom-houses on the day of the publication of this decree, or to those which may be on board of ships at anchor, or on ships which shall arrive at the ports of the Republic on that day.

ART. 6. Modifies certain sections of tariff enactments in conflict with foregoing.

ART. 7. This law shall take effect from day of publication (July 7).

Although not stated in the law itself, it has been declared by the Congress that the foregoing rates are not subject to the 50 per cent increase established by the law of April 27, 1901.

JOHN C. CALDWELL,
Consul.

SAN JOSÉ, *July 16, 1902.*

CUSTOMS LABORATORIES IN COSTA RICA.

A decree recently promulgated by the Government of Costa Rica establishes chemical laboratories in the custom-houses of the Republic. It reads:

Whereas:

(1) The vague manner in which the present tariff describes the articles of commercial importation has caused, and still causes, serious losses to the national treasury.

(2) Under diverse names there are introduced goods which conceal alcohol, of which large quantities are imported.

(3) Under the proper nomenclature of the tariff there are imported alimentary substances which have been adulterated to the detriment of the public interest and public health.

(4) The custom-houses lack the means of preventing such artifices.

It is decreed:

(1) There shall be established in the custom-houses of San José and Punta Arenas chemical commercial laboratories for the examination, analysis, inspection, and determination of the goods imported into the country, more especially the foods and drinks, as well as all drugs and preparations used in medicine, pharmacy, and perfumery. The office at San José shall perform the work and make the analyses for the custom-house at Limon.

(2) These laboratories shall examine and pass upon the articles of food which the health authorities may submit to them. They shall also make such chemico-legal examinations as the authorities may require, and do any other work which the Government may order.

(3) The administrators of the custom-houses shall retain, according to instructions of the Secretary of the Treasury, a sample of each article subject to analysis, to be transmitted to the chemical office. These shall be simply numbered and their consignment recorded in a book for the purpose of notifying the owner of the result.

(4) The chemical commercial laboratories shall be in charge of a technical chief and such other assistants as the executive power may direct.

JOHN C. CALDWELL,
Consul.

SAN JOSÉ, *July 8, 1902.*

NEW PIER AT PORT LIMON, COSTA RICA.

A contract for a new pier at Port Limon has been signed by the Government of Costa Rica and the Northern Railway Company, a firm in close connection with the United Fruit Company.

By the conditions of this contract, the pier is to be completed within two years from the date of approval by Congress (July 4, 1902). When completed, it is to become the property of the Government and is to be at the service of the public under such regulations as the Government may prescribe. The company is obligated to keep it in good condition during the term of the concession, and it may collect for this purpose a wharfage tax from ships, according to rates prescribed in the contract.

The pier is to be situated on the site, more or less, of the old wooden pier, the use of which was discontinued some two years ago, and is to be distant, at the nearest point, not less than 50 meters (54.5 yards) from the new iron pier of the Costa Rica Railway. It is to be on a foundation of wooden piles covered with plates of copper composition. The flooring is to be of wood, with superstructure of iron, and roof and sides of corrugated iron. The pier shall be at least 300 meters (327 yards) long and 15 meters (16.3 yards) wide. A space is to be reserved for the use of the Government in storing goods.

The company is to have the exclusive right to lay rails on the pier to connect with its line running from Port Limon into the banana country, but sufficient space is to be left for foot passengers and carts. The Government reserves the right to build a line of rails to carry goods to and from the custom-house, whenever it is deemed necessary.

The company is to be allowed to introduce, free of duty, the necessary material for the construction and preservation of the pier, under supervision of the Minister of Finance.

The consignees of merchandise arriving in ships which unload at this pier, and shippers of merchandise also, shall not be obliged to pay any dues to the company for use of the pier, but may always, at their own cost and risk, load or unload merchandise into or from ships consigned to the company, and transport the same in any manner which does not interfere with the movement of the company's trains on the pier.

There shall be at least two berths for ships, of equal facilities, at one of which the company may place the necessary machinery for loading and discharging. The company shall have free access, night or day, to the pier for the purpose of loading or discharging fruit ships, subject to such regulations as the Government may establish.

At one of the berths, preference shall be given to ships of the company, or those consigned to it or to the United Fruit Company, when they come to load fruit. But this preference shall not prevent other ships from using both berths, when the ships mentioned are not in port.

The company agrees to discharge or load ships for third parties when this work is consigned to it, and to carry on its rails merchandise or products delivered to it to the custom-house or to any part of Port Limon reached by its lines. A tariff is prescribed for such service.

War vessels and revenue ships of the Government are to be exempt from wharfage dues.

The concessions granted by this contract, as well as the obligations incurred, are to be in force during the term of the contract with the Northern Railway Company, made in 1894—ninety-nine years—or until 1993.

I am informed that the iron for the pier has already been ordered in the United States.

JOHN C. CALDWELL,
Consul.

SAN JOSÉ, *July 22, 1902.*

TRADE-MARKS IN HONDURAS.

Consul W. E. Alger reports from Puerto Cortes, July 8, 1902:

The Apollinaris Company, of Germany, made application last February for registry of trade-mark for its mineral waters. The result of the petition is a decree, of which I give herewith a translation, believing it will be of interest to American manufacturers to learn that they can now protect their products against imitations in Honduras:

DECREE.

The National Congress, taking into consideration the necessity of a law regarding trade-marks, decrees the following:

Law of trade-marks.

ARTICLE 1. Any sign which determines for commerce the specialty of an industrial product is considered a trade-mark.

ART. 2. The form, color, or designations which of themselves do not constitute a determining sign of the specialty of the product are not considered as trade-marks. In no case will an immoral sign be allowed.

ART. 3. Any proprietor of a trade-mark, be he a native or a foreigner residing in the country, can acquire the exclusive right to use the same in the Republic, subjecting himself to the formalities of the present law. Natives and foreigners who reside outside the country can register their trade-marks if they have in the country an agency or industrial or mercantile establishment for the sale of their products; this applies in regard to foreigners where treaties do not otherwise provide.

ART. 4. In order to acquire the exclusive right to a trade-mark, the interested party should present, either in person or by means of a representative, to the Secretary of Fomento a statement to the effect that he applies in accordance with his rights, accompanied by the following documents:

(1) Power of attorney from his principal (if the interested party does not present himself in person).

(2) Two examples of the mark, or representation of same by means of a drawing or engraving.

(3) In case the mark appears in relief or intaglio, or it presents any other peculiarity, two models which show these details.

(4) The written contract in virtue of which an agency has been established. This applies to article 3. This document must be duly legalized.

ART. 5. In the aforesaid presentation there must be expressed the name of the fabric, the place where it is made, the domicile of the proprietor, and the branch of commerce or industry to which the mark is to be applied.

ART. 6. A trade-mark belonging to a foreigner not resident in Honduras can not be registered unless it has been legally registered in the country of its origin.

ART. 7. The first party who has made legal use of the mark is the only one who can legally obtain the same. In case of dispute between two parties claiming the same mark, it belongs to the first possessor; and if this can not be proved, to him who first solicits registry.

ART. 8. The exclusive use of a mark can not be had save by virtue of a declaration by the Secretary of Fomento that the interested party has reserved his rights after having complied with all legal requisites.

ART. 9. The declaration mentioned in the foregoing article will be made without previous examination, on the exclusive responsibility of the petitioner and without affecting the rights of a third party. The Secretary of Fomento will publish the petition of the interested party, and, in case of opposition presented within ninety days following publication, will not register the mark until a judicial decision has been rendered as to who is entitled to registry.

ART. 10. Trade-marks are not transferable, except in connection with the establishment for which they serve, and such transfer is not subject to any special rules or formalities and is conducted according to the regulations of common law.

ART. 11. The duration of a trade-mark is indefinite, but it will be forfeited by failure of production for one year or more.

ART. 12. Facsimiles of trade-marks will be kept by the Secretary of Fomento, and anyone can obtain, at his own expense, a certified copy of same.

ART. 13. Any trade-marks not filling the foregoing conditions will, on request, be declared of no value.

ART. 14. The judge declaring void any trade-mark will send a copy of his decision to the Secretary of Fomento.

ART. 15. Trade-marks are false—

(1) When a copy of any legally registered trade-mark is used.

(2) When an imitation has some slight difference, but may be easily mistaken for the original.

ART. 16. Anyone will be considered guilty of the crime of counterfeiting, no matter where this may be committed, who has imitated a mark or made use of such imitation, in application to articles of the same industrial or mercantile nature.

ART. 17. The crime of counterfeiting a trade-mark is subject to penalties. as prescribed by the penal code.

Art. 18. Drawings and industrial models are included in the provisions of this law.

Art. 19. The protection which the present law gives to trade-marks does not extend to articles covered by them, except those made and sold in this country.

Art. 20. The present law goes into effect from the date of its promulgation, and all petitions which at that time are pending will be decided in accordance therewith.

Given in Tegucigalpa this 7th day of March, 1902.

WOMEN'S COLLEGE IN HONDURAS.

The Government of Honduras has granted a subvention of $100 a month to a college for women and has given it a building with accommodation for some 200 scholars.

This college was established in 1899 by an American, Dr. Joseph L. Jenckes. Honduras, while liberal in educational facilities for boys, has never made adequate provision for girls. This college fills the need. Five thousand dollars were obtained by subscription in the vicinity and some help has been given by people in the United States; this, with the Government aid, puts the college on a working basis.

The methods of education are American, the teachers are Americans, and instruction is given in English. The branches taught are: English language; Spanish language; grammar and literature; geography, with use of globe; arithmetic; botany; elementary history; music; astronomy (use of telescope); calisthenics; philosophy, natural and mental; plain and ornamental sewing; domestic economy; and deportment.

There are at present fifty scholars, and if more funds could be obtained there would soon be two hundred. A few thousand dollars would enable the college to erect dormitories, increase the corps of professors, and make many necessary improvements.

William E. Alger,
Puerto Cortez, *July 15, 1902.* *Consul.*

PACKING SHOES FOR CENTRAL AMERICA.

As a striking example of the lack of effort on the part of American manufacturers to capture and hold the trade of Central America, I cite the following:

On Tuesday's mail steamer there arrived here a representative of one of the largest shoe houses in the United States—a firm with some 4,000 employees.

On Wednesday morning several good-sized orders were secured, prices and quality of goods being very satisfactory. In the afternoon, when he learned that shoes must be packed in burlap, he at once canceled all orders and left on Thursday for home.

He claimed that it would be too much trouble to pack in burlap; that they were accustomed to pack in cases, and did not know how to pack any other way.

Shoes pay a duty of $1.20 silver (48.3 cents) per kilogram (2.2 pounds) gross weight, and, as a case would weigh some 20 kilograms (44 pounds), it would mean $24 ($9.67) to be added to cost of shoes.

WILLIAM E. ALGER,
Consul.

PUERTO CORTEZ, *July 22, 1902.*

BANANA PRODUCTION IN HONDURAS.

During the month of July, 180,000 bunches of bananas were shipped from this consular district to New Orleans and Mobile.

In addition, some 100,000 bunches were paid for and destroyed by the contractors, which, together with the fruit lost by noncontractors for lack of a purchaser, would make over 300,000 bunches of bananas produced in one month in the Department of Cortés.

The payment for and destruction of fruit here leads to the belief that there is now an overproduction, though it is alleged that the contractors' wish was to limit the importations into the United States and thereby keep up prices.

Taking into consideration the new plantations which will come into production next year, the month of July, 1903, should show an exportation of 500,000 bunches of bananas from this district—that is, if purchasers can be secured for all the fruit grown.

WILLIAM E. ALGER,
Consul.

PUERTO CORTEZ, *August 12, 1902.*

TEHUANTEPEC NATIONAL RAILWAY CONTRACT.

Consul W. W. Canada sends from Veracruz, July 28, 1902, copy of the contract made between the Mexican Government and the firm of S. Pearson & Son, of London, England, to improve, complete, and operate the Tehuantepec National Railway and the terminal ports of Salina Cruz on the Pacific side and Coatzacoalcos on the Atlantic side. This contract takes the place of the former one entered into by the same parties in 1899, and by this one the Mexican Government enters into a kind of partnership with the firm.

The principal paragraphs of the contract, the full text of which is filed for reference in the Bureau of Foreign Commerce, are summarized below:

The Government and the firm are to enter into partnership to exploit the Tehuantepec Railway and the ports of Salina Cruz and Coatzacoalcos. The corporate capital is $5,000,000 Mexican* ($2,075,000) and the period of the partnership is fifty-one years, beginning from the 1st of July next. The contractors will be entitled to regard the contract as rescinded if there has been a loss of capital amounting to $4,000,000 ($1,660,000). The Government can demand that the contract be rescinded if the contractors do not contribute their share of the capital, if they transfer the contract without approval of the Executive, on account of fraud or breach of trust, or on account of the company having lost in operation its corporate capital. The Government will appoint inspectors to supervise the work.

The company must keep the railway and ports in good condition, and make at least two trips per week by mixed trains, those carrying passengers not to consume more than fourteen hours in transit. Passengers will be charged: First class, 4 cents (1.6 cents) per kilometer (0.6214 mile); second class, 3 cents (1.2 cents); third class, 2 cents (0.8 cent). Each first-class passenger can carry 50 kilograms (110.2 pounds) of baggage; second class, 30 kilograms (66.1 pounds); and third class, 15 kilograms (33.06 pounds). The charges for transporting merchandise will be from 8 cents (3.3 cents) per kilogram for the first class to 3 cents (1.2 cents) for the sixth, diminishing 1 cent (0.415 cent) for each class. Cereals will belong to the sixth class. Rails and railway material will enjoy a rebate of 30 per cent on the tariff. Coal will be carried for 1½ cents (0.62 cent) per ton per kilometer (0.6214 mile) if for local consumption and in carload lots. Immigrants and troops will enjoy a rebate of 50 per cent on the rates. The company will carry correspondence and printed matter free of charge.

Materials for railway construction, rolling stock, telegraph material, floating stock, etc., may be imported by the company free of customs dues, and the properties will be exempt from taxation. The franchises for the maritime service will last for thirty-one years, and for the railway and ports for thirty-six years. For the expenses demanded by the works, the company is authorized to borrow money, giving the proceeds as security.

The company is to establish a maritime service in the Pacific, the Gulf of Mexico, and the Atlantic, to conduct coastwise and foreign traffic. This is to be begun by a steamship of a capacity of at least 2,000 tons and making 12 knots per hour. Other vessels are to be put into service as needed, and these may fly foreign flags and enjoy the advantages granted Mexican vessels until 1918, when the vessels must fly the Mexican flag. The company must receive on the ships pupils of the Naval Academy for training in navigation and maritime engineering. The Government may use the vessels for warlike services, subject to certain compensations to be rendered to the company.

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*1 Mexican peso, or dollar=41.5 cents, July 1, 1902.

PROMOTION OF COTTON-GOODS INDUSTRY IN MEXICO.

The Congress of the Republic of Mexico recently passed an act which will serve to promote the cotton industry of this country. The numerous railroad enterprises under way will provide manufacturers with new transportation facilities, and steps will be taken to enable them to make shipments direct from plant and on through bills of lading over existing roads and others now in course of completion, at rates that will enable the native manufacturer to successfully compete with foreign imports.

The following is an abstract of the above-mentioned act, dated June 6, 1902:

The Executive of the Union is empowered, and it remains optional with him, to return all, or a part of, the internal-revenue tax collected in conformity with the decree of November 17, 1893, in all cases where woven cotton goods are exported through custom-houses of the Republic for use or consumption in foreign countries.

The Executive is also empowered to grant exporters of woven cotton goods of native manufacture a drawback in a sum of not exceeding 8 cents per kilogram (2.2046 pounds) net on all import duties, port charges, and additional duties that may have been collected on the imports of raw cotton from foreign countries, which raw cotton has been manufactured into woven cotton goods.

COTTON GOODS.

All woven cotton goods of native manufacture that may have been exported under the stipulations expressed in the foregoing article may be reimported in conformity with regulations of article 11 of the custom-house regulations. In such case, however, the amount of drawback which may have been allowed by the Government must be refunded to the treasury at time of reimportation of said woven cotton goods.

WM. W. CANADA,
Consul.

VERACRUZ, *August 8, 1902.*

STOCK RAISING IN MEXICO.

In reply to inquiries by a New York correspondent,* Vice-Consul C. E. Wesche, of Ciudad Juarez, under date of August 2, 1902, writes:

The best locality for stock raising in this consular district is the northwestern portion of the State of Chihuahua, near the main range of the Sierra Madre Mountains. Rain falls for several months in the year, and water will also be more accessible during the dry season, from March to July. The Government price for "terrenos baldios," or waste lands, is $1.10 Mexican (45.6 cents) per hectare (2.471 acres), which can be paid in "bonos del gobierno"—Government scrip—which is at present quoted at 20 per cent discount. Persons can buy on time by mortgaging the land to the Government. Liberal concessions are given to colonists coming to locate with their families. In the past the Government has given to persons surveying waste lands one-third of the land surveyed. This is no longer done, as the Government owns very little land that is of value and accessible. Land owned by private individuals can be bought for cash at favorable prices. Grazing land runs from 50 cents to $1.50 gold per acre. Where it is necessary to dig for water, it can be had within 200 feet at the outside, and in many places within 15 feet of the surface. The average depth is about 50 feet. The average grazing land in Chihuahua will support one head of stock for every 10 to 15 acres the year round. Mexican cowboys receive about $30 Mexican ($12.45) per month. The railway charges for the transportation of a carload of cattle from Terraras or Casas Grandes, Mexico, to El Paso, Tex., are $55 Mexican ($22.83). Yearling steers bring about $10 gold per head at El Paso. Cattle raising should pay not less than 15 per cent; some ranches pay considerably more.

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*To whom advance copy has been sent.

There is little competition in farming. The vicinity of Casas Grandes is a good field for agriculture, as there are numerous mining camps to consume the produce of the farmer and prices are good for all articles. Near Galena there is a tract of farming land for sale, of 4,000 acres, at about $2 gold per acre. As a side issue to farming, the raising of hogs is profitable, as the Mexicans are great consumers of pork, most of which is now imported from the United States. The northwestern part of Chihuahua is well adapted for farming; cattle raising is already carried on on a large scale by such firms as the Corralitos Company, A. B. Urmston, and Luis Ferraras, each one of whom operates with $500,000 gold.

TOBACCO IN CUBA: DUTY ON CHEESE CLOTH.

Under date of July 30, 1902, Minister H. G. Squiers, of Habana, informs the Department of a change in the tariff law, admitting cheese cloth into Cuba free of duty, in order to promote the "covered cultivation" of tobacco. He says:

Under the old law, this duty on cheese cloth was from 15 to 50 cents per kilogram (2.2046 pounds), according to the number of threads; and the amount imported has been approximately $15,000 worth per annum—a little more than one-half coming from the United States and the remainder from England.

Minister Squiers incloses a translation of the President's message to Congress recommending that cheese cloth be admitted free of duty and setting forth his reasons for such action. The message is as follows:

Several important agriculturists from the Vuelta Abajo district—men engaged in tobacco raising—have waited upon the Secretary of Agriculture, Industries, and Commerce, urging assistance in the cultivation of this plant by the system known as "covered cultivation." The trials which have been made of this system up to the present time, although on a small scale, have been so satisfactory that the petitioners propose to use the same over a very great extent of land.

This system gave Sumatra such a preponderance that the value of the wrappers now imported into the United States from that island has reached—according to the petitioners—the respectable sum of $22,000,000. This system consists in placing a fabric known as cheese cloth at a certain height in the form of an awning to prevent the sun rays from wounding the plant with their intensity and the winds from swaying and breaking its leaves; to keep the earth fresh and, above all, prevent (what occurs to-day) the insects attacking the plants. If the butterflies which propagate these insects can not gain access to the plant it will not be possible for them to deposit the small eggs which, by the well-known metamorphosis, are transformed first into larva and then into caterpillar chrysalis. For the aforesaid purpose it is desired to import from foreign countries, before the 1st of August next, the necessary quantity of this fabric, and it is requested, as assistance from the State, that it be exempted from the payment of import duties. The Executive is of the opinion that everything which tends to bringing Cuban agriculture out of its state of prostration is worthy of attention.

With the solution of the economic problem of the "covered cultivation," it would be an easy matter for the island of Cuba to supply the American market with the wide, clear, and long wrappers which are in such demand in the United States and where considerable sums are annually spent for Sumatra tobacco because it possesses the aforesaid qualities. In conformity with the foregoing, the Executive has the honor to lay before Congress, for its consideration and such decision as it may deem proper, the advisability of declaring as exempted from the payment of import duties the fabric known as "cheese cloth," which may be received in this island for the purpose mentioned, provided, however, that to prevent any kind of abuse and fraud said concession may be granted under the following condition: That the importations be made direct by each agriculturist without the intervention of third parties; that the said agriculturist be obliged to show, within a reasonable time and at the custom-house through which the entry may have been made, that the fabric has been used in its entirety in the cultivation of tobacco, a certificate issued by the municipal mayor of the district in which each farm may be situated to constitute satisfactory evidence thereof.

COTTON-GOODS TRADE IN CUBA.

Under date of August 12, 1902, Minister H. G. Squiers, of Habana, sends the following suggestions:

American manufacturers have either not studied or not heeded certain indispensable requirements to gain and retain the cotton-goods trade in Cuba. They rely mainly on the export commission houses in New York engaged in Spanish-American trade to secure business for them here. Once in a while they send one of their representatives to Cuba to work up trade, and he is generally one who does not speak Spanish and must, therefore, transact his business through interpreters.

The following requirements are noted: Special and careful packing, giving exact and minute details of goods in the invoices or on a separate memorandum attached to invoices. This should specify marks and number of packages and gross and net weights. The net weight of each separate class of goods contained in a single case should be specified; how each is packed, whether without wrapper or with paper wrappers or pasteboard boxes, and the net weight with and without wrappers or pasteboards; the total number of pieces of each class or quality; the total number of yards; price per yard; width; whether white, crude, printed, or manufactured with dyed yarns; and whether mixed with wool, silk, or linen.

On the foregoing data depends the tariff classification; for this reason the statement is essential to the merchant here, as it remarkably facilitates his customs declarations.

European houses are liberal in the matter of credits, and it should be observed that failures are rare among the textile importers of Habana.

The British have the largest part of the cotton-goods trade. Spain and the United States are close rivals, Spain surpassing the United States in some lines, notably in knitted hosiery and underwear. Spain does a thrifty trade with Cuba in wines, of which the United States might secure a share for its Californian products if they were properly introduced. Spain also ships a considerable quantity of hams and sausages to this market. Too much importance can not be attached to labeling and advertising goods in the Spanish language, this being vital to their ready purchase and popularity.

JERKED-BEEF EXPORTS TO CUBA.

The exports of jerked beef from the River Plata establishments to Cuba have been officially reported, as follows:

	Metric tons.*
1901–2	8, 974. 5
1900–1901	9, 804. 6
1899–1900	6, 222. 3

Thus, for this season, there have been sent to Cuba and Porto Rico the goodly quantity of 19,777,182 pounds of meat product, making the voyage of over 7,000 miles chiefly by sailing vessels.

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*Of 2,204.6 pounds.

For the same period, the slaughter of cattle for jerked beef is officially reported as follows:

	Number.
Montevideo saladeros	348, 316
River saladeros	337, 500
Uruguayan slaughter	685, 816
Buenos Ayres saladeros	169, 900
Argentine River saladeros	201, 400
Argentine slaughter	371, 300
Total	1, 057, 116

The slaughter for meat extracts—which are all exported to Europe—has been 238,600 head of choice cattle. This makes a total of 1,305,716 for the season, and exceeds that of any year since 1898. These cattle are largely of the mixed-blood class, and the average cost per head for 3 to 5 year olds has not exceeded $22 in United States gold.

ALBERT W. SWALM,
Consul.

MONTEVIDEO, *June 5, 1902.*

MINERAL PRODUCTION OF BRITISH COLUMBIA IN 1901.

The annual report of the minister of mines of British Columbia is just out, and from it are condensed the following statistics:

The total value of the various mineral products of the Province up to and including 1901 was $172,241,988, as follows:

Gold:	
Placer	$63, 554, 543
Lode	17, 161, 463
Silver	16, 534, 554
Lead	9, 622, 689
Copper	8, 809, 546
Other metals	51, 878
Coal and coke	54, 157, 315
Building stone, bricks, etc	2, 350, 000
Total	172, 241, 988

The product of the mines in the Province during 1901 was $20,086,780. The per capita mineral production of the Province for 1901 was $134.

The increases for each year over that preceding since 1896 are shown below:

Year.	Increase over preceding year.	
		Per cent.
1896	$1,864,914	33
1897	2,947,312	39
1898	451,593	4.3
1899	1,486,270	13.6
1900	3,951,620	31.8
1901	3,742,029	23

As compared with 1900, the increase or decrease in production for 1901 was:

Mineral.	Increase.	Decrease.
Gold:	*Per cent.*	*Per cent.*
Placer		27.8
Lode	26	
Silver	25	
Lead		25.5
Copper	175	
Coal	1.5	
Coke	49	
Other materials	22.8	

The production of lode mines in 1901 is valued at $13,683,044, an increase over the previous year of $3,613,287, or 36 per cent.

The tonnage of ore mined in 1897 was 169,362 tons; in 1898 it had increased to 215,944 tons, or about 27.5 per cent; in 1899, to 287,343 tons, or 33 per cent; in 1900, to 554,796 tons, or 93 per cent; in 1901, to 920,416 tons, or 66 per cent over previous years.

While this great advance in tonnage is chiefly due to the enlarged output of the mines previously working, there have been a number of new ones added to the list during the past year.

The following table shows the number of mines in each district which shipped during the past year:

District.	Mines shipping.	Mines shipping over 100 tons in 1901.	Men employed.
	Number.	*Number.*	*Number.*
Cassiar (Atlin)	1		1
East Kootenai:			
Fort Steele	4	4	236
Other divisions	4	1	26
West Kootenai:			
Ainsworth	13	7	159
Nelson	11	8	493

District.	Mines shipping.	Mines shipping over 100 tons in 1901.	Men employed.
West Kootenai—Continued.	*Number.*	*Number.*	*Number.*
Slocan	36	21	870
Trail	13	9	952
Others	8	2	66
Lillooet	3	3	43
Yale:			
Osoyoos, Grand Forks, and Kettle River	17	14	728
Yale, Ashcroft, Kamloops	2	2	40
Coast	7	7	334
Total	119	78	3,948

Incomplete returns from nonshipping mines indicate that these number 47 and employed 374 men—227 below ground and 147 above ground.

The following table shows the value of the mineral production of British Columbia in 1901:

Gold	$5, 318, 703
Silver	2, 884, 745
Copper	4, 446, 963
Lead	2, 002, 733
Iron	17, 238
Coal	4, 380, 993
Coke	635, 405
Total	19, 686, 780

COAL.

The gross output of coal during 1901 was 1,691,557 tons, of which 221,226 tons were used to make coke, so that the net output for the year was 1,460,331 tons of coal and 127,081 tons of coke. The increase over 1900 was 1.5 per cent of coal and 49 per cent of coke.

The sales of coal were: For consumption in Canada, 413,705 tons; for export to the United States, 895,197 tons; for export to other countries, 18,966 tons—total, 1,327,868 tons (of 2,240 pounds).

The total sales of coke amounted to 127,533 tons, of which 80,154 tons were for consumption in Canada and 47,379 tons were for export to the United States. The Vancouver Island collieries produced 1,261,744 tons of coal and 15,398 tons of coke. The Crow's Nest collieries produced 198,587 tons of coal and 111,683 tons of coke.

GOLD.

The gold production of the Province—including both placer and lode—was valued at $5,318,703, an increase over that of 1900 of $586,598, or about 12 per cent. The placer-gold output for 1901 was $970,100, a decrease from the previous year of $308,624; but the lode mines produced $4,348,603 in value, a gain of $895,222, or 26 per cent. Approximately, this gold has been derived as follows: From direct smelting of copper-gold ores, $3,474,738; from combined amalgamation and concentration, $873,865; total, $4,348,603.

SILVER.

The total quantity of silver produced in 1901 was 5,151,333 ounces, valued at $2,884,745. This is an increase over the previous year of $575,545 in value.

LEAD.

The production of lead was 51,582,906 pounds, worth $2,002,733, a decrease in value of $689,154, or about 25 per cent, as compared with the production of 1900, but in that year there was a phenomenal increase over 1899 of 206 per cent. The lead production of 1901 shows an increase over 1898 of 86 per cent and over 1899 of 128 per cent.

COPPER.

The copper production for the year was 27,603,746 pounds of "fine copper," valued at $4,446,963, an increase of 17,606,666 pounds and of $2,831,674 in value over that of the previous year; it was derived from the following:

	Pounds.
Boundary district	14,511,787
Trail (Rossland) district	8,333,446
Coast district	3,115,872
Nelson district	1,599,449
Other districts	43,192
Total	27,603,746

OTHER MINERALS.

Platinum.—A small quantity of platinum—about $457 worth—was produced from the Similkameen district.

Iron ore.—Statistics show that 5,746 tons of ore were shipped, which were used for experimental purposes or as a flux in smelting other ores, no iron blast furnace at present existing in British Columbia.

ABRAHAM E. SMITH,
Consul.

VICTORIA, *July 22, 1902.*

CONCENTRATION OF COPPER ORE IN BRITISH COLUMBIA.

The following extract from an editorial in the Evening World, of Rossland, British Columbia, may be of interest to persons engaged in the mining industries:

> The press of the interior has devoted a good deal of space to a discussion of the Elmore process for the concentration of ores by oil and the probable results of its introduction in the low-grade camps of the Kootenais. The opinion seems to have

been arrived at that if the Elmore process will do one-half that is claimed for it by its inventor, the problem of the profitable treatment of low-grade copper ores has been solved and properties which are now lying idle will speedily become dividend payers; in fact, that it would cause such a revolution in British Columbia mining methods as cyaniding did in South Africa.

The process, which is very simple, may be described as follows:

The ore, having been reduced to a freely flowing pulp, passes directly from the mill into the open end of a horizontal rotating drum, inside of which is fixed a helix with cross blades or buckets, which lift up the pulp to a certain height and drop it again, at the same time propelling it forward to the opposite end of the drum, thus keeping the pulp in constant agitation for the few seconds which are occupied in its passage through the drum. With the pulp is also admitted a small quantity of a thick, sticky oil (the residue left in the stills in the refining of petroleum). This oil is, of course, subjected to the same agitation as the pulp, and is consequently tumbled about with it, and exercises the remarkable property of sticking to and buoying up the particles of mineral that are floating about or suspended in the pulp, but it does not stick to or have any effect whatever upon the particles of rock which are present in much greater number. The oil and pulp automatically discharge from the opposite end of the drum into a pointed box or spitzkasten, in which the tailings or rock at once settle down and flow off with the water at the bottom, while the oil, by reason of its buoyancy, floats to the top and carries up with it practically all the values which the ore contained.

From the top of the pointed box, the oil with its load of mineral flows off continually to a specially constructed centrifugal machine, where the oil is extracted from the mineral and is at once ready for re-use. For close extraction, three mixing cylinders are sometimes used, the pulp passing from one to another, after floating off the oil and collected mineral, and receiving a fresh stream of oil in the next mixer. A second centrifugal machine is also found desirable below the first, to separate the last of the oil and water from the concentrates. The concentrates are left in the machine, practically free from oil.

The process was first tried in the laboratory, then on a small working scale, and then with a plant erected at the Gladsir mine, Wales, capable of treating about 50 tons of ore per week. After a lengthened trial of this plant, it was replaced by a much larger one, which treats 250 tons per week. The mine was formerly equipped with one of the most modern concentrating mills obtainable, operated under the supervision of able experts, but only 11.5 per cent average value recovery could be obtained from the ore. With the Elmore process, over 80 per cent of the metallic values were recovered, and the whole of the original jig and Luhrig table plant was abandoned in favor of the new process.

L. EDWIN DUDLEY,
Consul.

VANCOUVER, *August 6, 1902.*

CANADIAN TRADE IN 1902.

A statement of Canada's trade, prepared by the customs department, shows an increase in traffic with all the principal countries. A feature of the statement is the steady growth in business with Great Britain. The total imports for consumption in the fiscal year amounted to $202,791,595, as against $181,237,988 in 1901.

Some of the principal sources of imports for consumption were:

Country.	1902.	1901.
United States	$120,809,956	$110,485,008
Great Britain	49,215,693	43,018,164
France	6,670,778	5,398,021
Germany	10,814,029	7,021,405
Italy	724,682	327,361
Belgium	1,700,697	3,828,450
Newfoundland	1,125,426	625,568

The exports of Canadian produce amounted to $196,019,763 in the last fiscal year, as against $177,443,439 in 1901. This trade was distributed as follows:

Country.	1902.	1901.
United States	$71,196,505	$67,995,726
Great Britain	109,348,245	92,857,525
France	1,388,848	1,436,628
Germany	2,692,535	1,374,716
Belgium	2,444,499	1,728,484
Newfoundland	2,381,367	2,142,877
Australia	2,574,759	2,297,521
West Indies	1,967,039	1,898,262

FELIX S. S. JOHNSON,
Commercial Agent.

STANBRIDGE, *August 14, 1902.*

FOREIGN TRADE OF CANADA.

The aggregate of Canada's foreign trade, as stated by the Dominion authorities, for the year ended June 30, 1902, is $414,517,358, an increase of $36,827,673 over last year. The imports for consumption, including coin and bullion, amounted to $202,791,595. The value of dutiable goods was $118,657,496 and of the free goods $77,823,694. The total exports were $211,725,563. The exports of domestic produce amounted to $196,105,240, an increase of $19,966,048 over 1901.

The figures for domestic produce are:

Mines	$34, 947, 574
Fisheries	14, 059, 070
Forest	32, 119, 429
Animals and their produce	59, 245, 433
Agriculture	37, 238, 165
Manufactures	18, 462, 950
Miscellaneous	32, 599
Total	196, 105, 240

HENRY S. CULVER,
Consul.

LONDON, *July 21, 1902.*

PLOWS IN CHINA.

North China, Mongolia, Manchuria, and that part of Siberia bordering on the Pacific are destined soon to become consumers of American agricultural implements. The greater part of this country is susceptible of cultivation. The production of wheat is already a leading industry in various localities. It is carried on without the use of any modern machinery; but in spite of these crude methods, the wheat usually sells at about one-half the price in the United States, and the natives would increase the production by millions of bushels for the price of 30 cents gold per bushel delivered at mills.

There are several reasons why I consider this territory a good field for marketing agricultural implements. First, the country is not, as a rule, thickly populated; this is especially true of Mongolia, Manchuria, and Siberia. Laborers are imported each season to assist in planting and harvesting crops. There exists, therefore, more of a disposition to save labor than is generally found in other parts of China. Second, all of this country is abundantly supplied with animal power. Ponies, mules, donkeys, and cattle are used in every way to relieve the burdens of men. There are few parts of the world where animal power is more generally used than here. Plows, harrows, rollers, carts, and various other crude machines, locally made, are in constant use. The hand tools and the methods in use in other parts of China for cultivating, harvesting, and marketing crops are not so extensively employed here. As the people are so well trained in the use of this animal power and already use many crude machines, there will not be serious difficulty in introducing better appliances. Third, the country is generally cultivated in much larger fields than in middle and southern China, and the employment of improved machinery would involve no change in the nature of their industry. Fourth, the opening of the country by railroads will reduce the cost of getting products to markets and at the same time increase the supply.

While these more general features are conducive to the introduction of agricultural machinery, it must not be understood that there are no difficulties.

The expansion of Russia and the advent of Russians in Siberia, Mongolia, and Manchuria will have a tendency to enlarge the use of machinery; but for an immediate market, it is necessary to overcome the natural conservatism of the Chinese. About twenty years ago, an Englishman brought two plows here. He tried to sell them, and could not; he endeavored to give them away, but no one would take them; then he made an effort to get someone to experiment with them, but he could not even get a man to hitch a team to one.

A more recent experiment was the introduction from the United States of plows of the type used in Hindoostan. The general form of this plow—with a single upright handle, similar to the native plow—it was thought would make it acceptable; but, unfortunately, it had a long beam and was designed to be attached to a yoke over the animal's neck, and so it proved a failure.

Above all other considerations, the plow must be cheap—as cheap as it is possible to make it, and so cheap that it would not be used in the United States. The form must differ very little from that now in use by the natives—short beam, single handle, and as simple of construction as possible.

The value of an improved plow will, I think, lie in deeper plowing with the same power. This would have to receive practical demonstration in every hamlet, and care should be taken to avoid some superstition, which might be done by giving the plow a favorable name.

An expert should be sent to the country to investigate all the conditions and the plow should be designed to meet them.

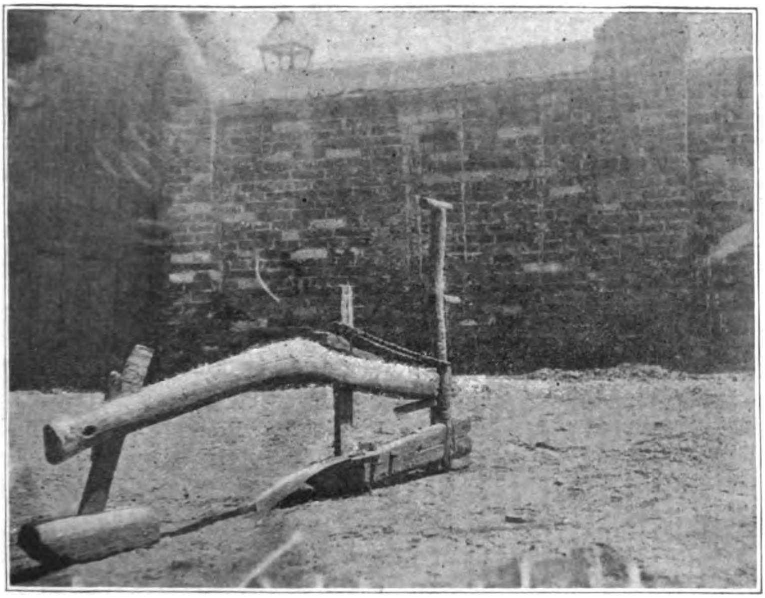
The market, if secured and cultivated, will receive millions of plows. Oregon fir is suitable for the woodwork of the plows, and if the iron part can be produced cheaply upon the Pacific coast the plow could no doubt be made there best.

The illustration given herewith presents a general view of the plow commonly used. The only iron about the implement is a long point that turns down to enter the ground. There is also another form of point, wider and shorter than the one shown in the cut, that very much resembles that of the shovel plow. These points are cast in considerable quantities in the seaports from scrap iron that is imported. They are light, inferior articles and cost from 20 to 30 cents gold each.

Blacksmiths with wheelbarrows loaded with tools, bellows, casting molds, etc., go among the interior villages every spring to make and renew the plows. The farmers pay 15 or 20 cents for a new plow point made from their own old iron.

In northern Manchuria, near Harbin, where there are several modern flour mills, better plowing is done and from three to five mules or ponies are hitched to each plow. It is at this point that I think the effort to introduce the plow would be most successful, and thrashing and cleaning mills would also be most easily introduced here.

Kao-liang, or tall millet, is extensively grown throughout this country. It is thrashed in the following manner: The heads are cut off, spread on the floor, and thrashed by means of a stone roller, to which an ox or mule is harnessed. The separation of the grains from their cases is completed in about four hours. The empty heads are then removed, either to be burned as firewood or to be made into brooms, and the grain is swept up and passed through a winnowing machine or tossed into the air, where the wind catches and removes the dust. The grain is now ready to be packed into sacks for market, but it has still to be husked before it can be used for human food. It is given to animals in its unhusked state. To remove the husks, the grain is spread on a circular stone platform and crushed by a revolving stone roller. The whole is then passed through a winnowing machine.



The vast area of splendid soil for grain production, the reliability of climatic conditions that make crop failures and famine most uncommon, the nearness of the country to the Pacific Ocean, the development of railways, and the frugal, industrious habits of the people all promise a great increase in wheat and grain production, and make this an inviting market for agricultural machinery.

The field should be carefully studied, and, in order to satisfy the prejudices of the people and create a market, implements should be designed especially for this territory.

HENRY B. MILLER,
Consul.

NIUCHWANG, *July 5, 1902.*
No 265—02——4

MANCHURIAN FLOUR.

A committee of the local board of trade gives some details of the Manchurian flour market. Wheat in Manchuria sells at 25 to 30 kopecks (12.8 to 15.4 cents) per pood (36.112 pounds). One pood of wheat yields 67 per cent of flour of the first quality. The flour costs in Manchuria about 45 kopecks (23 cents) and freight 35 kopecks (18 cents) per pood—total, 80 kopecks (41 cents), delivered at this market. Russian wheat costs from 80 to 85 kopecks (41 to 43.7 cents) per pood, and the best flour from this would cost not less than 1.30 rubles (67 cents) per pood; hence, Manchurian flour is cheaper than Russian wheat.

There are twelve private steam flour mills in the South Ussuri District, besides a number operated by water. The largest one cost 300,000 rubles ($154,500). It is situated at Nikolsk-Ussurisk and has an estimated capacity of 1,800,000 poods (65,001,600 pounds) annually. The other eleven are also worked by steam; estimated capacity, 600,000 poods (21,667,200 pounds) yearly. Five are situated at Nikolsk; six in different parts of the district.

At Harbin there are two steam flour mills at work. The Eastern Chinese Railroad Company paid 150,000 rubles ($75,250) for one. One mill has a capacity of 3,500 poods (126,392 pounds) daily; it is proposed to raise this to 7,000 poods (252,784 pounds), and to open a macaroni department. The other mill, with a capacity of 600 poods (21,667 pounds) daily, belongs to a company which has been operating it for two years. Its capacity is also to be increased. New engines and modern appliances are ordered. Both mills are excellently situated on the banks of the Soongaree, a short distance from the railroad. It is predicted that the output of these mills will drive out American flour, and will soon supply the entire commissary department.

The Chinese merchants sell American flour cheaper than do the Siberian merchants. The explanation given is that a bag of flour is supposed to weigh 54 to 55 pounds, but the Chinese merchants are said to deliver only 50 pounds to the bag.

R. T. GREENER,
Commercial Agent.

VLADIVOSTOCK, *July 5, 1902.*

GINSENG IN CHINA.

In reply to inquiries by a New York correspondent,* Consul James W. Ragsdale, of Tientsin, under date of June 26, 1902, writes:

There are four principal kinds of ginseng known to the trade—the native (which comes from Kirin and its neighborhood), the Korean, the American, and the Japanese. Miraculous healing properties are ascribed to the Kirin ginseng, and it commands a very high price, the best specimens being sold at 200 to 600 times their weight in silver. Only the wealthy, of course, can indulge in this costly drug, but such is the faith of all classes of China in the life-giving virtues of the plant that even the poorer classes make tremendous sacrifices to obtain it in cases of emergency. Owing to the immense demand and the limited supply in the wild state, the farmers near Kirin are doing a thriving business in cultivating ginseng, although it commands only a fraction of the price that is paid for it in a wild condition.

Korean ginseng is next in cost, the prices ranging from $5 to $75† ($2.07 to $31.12) per catty (1⅓ pounds), according to size and quality. The consumption of Korean ginseng must be enormous, but no statistics are available, as most of it is smuggled over the border from Korea to China.

American ginseng is becoming more widely known and more popular every year, especially in the southern provinces. In the last few years, the prices paid for it have more than doubled. In the province of Chinkiang, American ginseng is in special demand. Almost everybody takes it in the spring as a tonic. The retail prices prevailing at present are:

Description.	Price.	
	Mexican.	*United States.*
Best........per ounce...	$2.50	$1.04
Good to fair........do......	1.00	.415
Fair to common........do......	$0.50 to 100.00	$0.207 to 41.50

The cheapest ginseng comes from Japan; it is used principally by those who can not afford the other kinds.

There can be no doubt that a profitable business can be done in this article, if the trade is properly pushed by Chinese agents of good social standing. Wild ginseng commands a much higher price in China than the cultivated article.

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*To whom the original letter has been sent.

†1 Mexican dollar=41.5 cents.

THE CHINESE LANGUAGE.

While China is considered the land of promise for our manufacturers and farmers, the importance of the knowledge of the Chinese language is greatly undervalued. I submit the details of a recent interview with a linguist who has given special attention to this subject.

It is well understood that in order to enter into permanent commercial relations with a foreign country it is indispensable to know its language. When Russian industries began to develop, the Germans recognized that in order to engage in profitable trade in that country it was necessary to learn Russian, and there is now no country where the Russian language is so much taught as in Germany.

The Chinese language is ideographic. It conveys the idea and not the word for a thing, as the figure "8" represents the idea and not the word. The Chinese have invented more than 40,000 marks for their writing. In the opinion of my informant, it will require only about 3,000 marks for mercantile correspondence, and it will be easier to learn them than the words of an ordinary foreign language.

Russian is more difficult for Americans than Chinese. Anyone can learn enough of the writing to answer ordinary purposes in a few months and have his knowledge perfected by a linguist within about a year. It takes much longer to learn the spoken language, because of the variety of dialects. An exact instruction in one of the Chinese languages can only be given by a Chinaman.

This method has been adopted in Germany. Besides the professor for the theory of language, there are four Chinese linguists in the Oriental Seminary of Berlin teaching the business style and the languages of Pekin, Shanghai, and Canton. It is not intended to fit pupils for the diplomatic service, but for commercial work.

CHARLES NEUER,
Consular Agent.

GERA, *July 12, 1902.*

EASTERN CHINESE RAILROAD SERVICE.

The Eastern Chinese Railroad is about to open direct passenger communication from Moscow to Port Arthur. The trains on the South Ussuri Railroad will meet steamers which run between the Russian ports on the Pacific and the ports of China and Japan. Moreover, the railroad proposes to organize regular steamship communication on the Ussuri and Sungari rivers, to the station of Iman, on the Ussuri line. This small town is growing rapidly. There are dense forests in the vicinity which furnish sleepers and logs for the Chinese and Siberian railroads. At the opening of regular passenger communication on the Eastern Chinese Railroad, there will be ten cars of the International Sleeping-Car Company at the junction stations, and this number will be increased on January 1, 1903, to forty cars on the Manchurian Railroad. The cars will run a distance of 2,000 miles and will be equipped with all modern improvements.

SAMUEL SMITH,
Consul.

MOSCOW, *July 16, 1902.*

RAILROAD CONSTRUCTION IN INDO CHINA.

By Presidential decree promulgated on July 25, the government of Indo China is authorized to realize by means of a loan the sum of 70,000,000 francs ($13,510,000) for the purpose of constructing railroads in the French colony named. The loan is permitted under the terms of the law of December 25, 1898, which provided for a maximum issue of bonds to the amount of 200,000,000 francs ($38,600,000), to be sold under terms to be fixed by Presidential decree. The total amount is by the law mentioned restricted to the construction of the following lines: Haïphong to Hanoï and to Laokay, Hanoï to Nam-Dinh and to Vinh, Tourane to Hué and to Quang-Tri, Saigon to the Khanh-Hoa and to the Lang-Bian, and Mytho to Cantho.

Five days after the passage of the law, an initial loan of 50,000,000 francs ($9,650,000) was negotiated, and the issue of bonds to the amount of 70,000,000 francs ($13,510,000) is the second to be authorized. The money is desired to continue the construction of various of the above-mentioned lines, which has been actively pushed under the progressive administration of the distant colony.

The bonds have a face value of 500 francs ($96.50) each and bear 3 per cent interest, payable semiannually, interest and principal guaranteed by obligatory inscription upon the annual colonial budget. In effect, they are French Government bonds, the budget being voted by the Chamber and Senate. These bonds will be taken up by lot annually after May 1, 1909, and will run in no case beyond seventy-five years. They are subject to no tax of any sort in Indo China, and in France are not subject to any revenue tax. Interest is payable in Paris. The bonds are offered for sale through all the important banks at 93—that is to say, at 465 francs ($89.75) for each bond of 500 francs ($96.50).

As the governor-general of Indo China has considerable latitude in the matter of conceding the exploitation as well as the construction of the railroad enterprises now in hand, this subject is not only important on its financial side, but suggests openings for American builders and furnishers. Probably the most speedy method of securing information would be by addressing the Minister for the Colonies at Paris.

ROBERT P. SKINNER,
MARSEILLES, *August 1, 1902.* *Consul-General.*

STEAMSHIP SERVICE BETWEEN JAVA, CHINA, AND JAPAN.

Mr. John W. Garrett, secretary of legation at The Hague, under date of July 31, 1902, reports that the creation of a regular steamship service between Java, China, and Japan, with support from the Government of the Netherlands, has been authorized by the States-General and received the royal sanction.

The convention provides for a regular service of ships, at least every month, with the proviso that the governor-general shall always have the right to appropriate, at such price as experts shall decide, any one or more of the vessels in service. Copies and translation of the convention are inclosed, from which the following is taken:

> The vessels will touch at Sœrabaya, Samarang, Batavia, Hongkong, Shanghai, Yokohama, Kobé, and Amoy, the four first mentioned both on the outward as well as on the homeward trip. The subsidy accorded by the State shall be:
>
> | | | Florins. |
> |---|---|---|
> | During the first five years | per annum | 300,000=$120,600 |
> | During the second five years | do | 250,000= 100,500 |
> | During the third five years | do | 200,000= 80,400 |
>
> On condition that whenever it shall appear from the balance sheet of the shareholders, as adopted, that the apportionment of the profits of the company exceeds 5 per cent of the deposited and unredeemed capital, the State shall be paid two-fifths of such surplus profit; the other three-fifths, to a maximum of 4 per cent of the invested and unredeemed capital of the company, shall remain in the hands of the company; and of the remainder, three-fourths shall accrue to the State and one-fourth to the company—everything in this manner until all the amount enjoyed as subsidy shall have been repaid.

A report on the same subject has been received from Consul B. S. Rairden, of Batavia. He adds:

It has been decided not to extend this line to the west coast of the United States at present; but should it be found profitable, this may be done within a few years.

AMERICAN MINING INTERESTS IN NEW CALEDONIA.

A New Caledonian paper—La France Australe—reports in a recent issue the formation of an American company with important mining interests on this island.

The mines of New Caledonia have for some time exported considerable quantities of nickel and chrome to the United States, and these exports are certain in the future to increase very largely.

It will be noted that the International Nickel Company, the new concern, is composed entirely of American capitalists, and that in connection with Le Nickel Company, of Paris, it will practically control the nickel production of the world. The properties of this company embrace much of the finest mining land in New Caledonia. The feeling on the island is cordial to all American enterprise, and should the Oceanic Line make its proposed change of route, stopping at Nouméa, one may expect to see this colony dealing almost completely with commercial houses in the United States. There will then be an excellent chance for firms upon the Pacific coast to do direct business with Nouméa, as merchants here realize that they can buy supplies much more advantageously in our country than in Australia or Europe, provided the transportation facilities mentioned are afforded.

GEORGE M. COLVOCORESSES,
Commercial Agent.

NOUMÉA, *June 28, 1902.*

TRANSCONTINENTAL RAILWAY IN AUSTRALIA.

Consul-General J. P. Bray writes from Melbourne, July 11, 1902, that he has received a letter from Mr. J. J. Rendle, secretary of the North Australian League, Melbourne, relative to a proposed transcontinental railway from Adelaide, South Australia, to Port Darwin, North Australia, and expressing the wish that the matter be brought to the attention of capitalists and railroad-plant builders in the United States.

The South Australian government, Mr. Rendle says, will introduce a measure in parliament early this session offering capitalists facilities to build this line. He incloses maps and circulars descriptive of the route, which have been filed in the Bureau of Foreign Commerce, where they may be consulted by parties interested. The circulars set forth the advantages possessed by northern Australia for stock raising. The drought in South Australia and in the hinterland of New South Wales and Queensland has directed attention to the need of pastoral railways to carry fodder and transport the stock to meat works or new pastures. The government of New South Wales, to assist pastoralists, has declared its intention of extending a line northwesterly from Bourke to the Queensland border, which will become a stage in the transcontinental line. It is the policy of the Queensland government to bisect the great lateral trunk lines with a north and south line from the border to Camooweal, which will form another stage. The country offers no engineering obstacles. The length of the entire line from Adelaide to Port Darwin will be 1,896 miles, and the journey from London, via the Siberian Railway to Port Arthur and thence by steamer to Port Darwin, it is estimated, can be made in seventeen days.

PETROLEUM IN SOUTH AUSTRALIA.

It is reported that an oil spring of good quality has been discovered in the southeastern district of South Australia. The spring is near the lakes which exist at the mouth of the Murray River, in the vicinity of the little town of Meningie, on the eastern shore of Lake Albert. The existence of petroleum in this desert region has been known for years. The oil exudes from the banks of Lake Coorong, and also from the more southern coast line. The quantity of the supply and the purity of the oil are questions for future investigation.

At present, large quantities of kerosene are landed at the various ports of this Commonwealth from Asia and America. The oil is stored in immense tanks, from which it is retailed much in the same way as milk. Should the discovery develop into an established industry, it will seriously affect the importation of American kerosene into this Commonwealth.

F. W. GODING,
Consul.

NEWCASTLE, *June 21, 1902.*

COAL RESOURCES OF AUSTRALIA.

According to reports made by the Government geologists of Victoria and Queensland, there are no less than 62,000 square miles of coal-bearing country in the eastern States of Australia. The probable quantity of coal available (after deducting one-third for loss), in seams ranging from 2 to 27 feet in thickness, is not less than

240,448,053,000 tons. In Victoria, there are beds of tertiary coal over 260 feet thick, and extensive seams of oil-bearing shale exist in New South Wales and Tasmania. The coal in New South Wales is estimated at 115,346,880,000 tons; in Queensland, at 83,310,000,000 tons; in Victoria, at 32,388,213,440 tons; in Tasmania, at 8,363,520,000 tons; in West Australia, at 1,045,440,000 tons. The royal commission on the coal resources of Great Britain computed that the quantity available in the British Isles was 146,480,000,000 tons, which amount, added to that of Australia, makes the enormous total of 386,928,053,000 tons. It would appear from these figures that the British Empire produces about one-third of the coal mined in the world.

F. W. GODING,
Consul.

NEWCASTLE, *June 14, 1902.*

TIMBER INDUSTRY OF NEW SOUTH WALES.

I submit a few facts relative to the timber industry of New South Wales, as there appears to be an erroneous impression in the United States of the timber wealth of this State.

According to the latest available statistics, no less than 13 per cent of the factory employees of the State are variously engaged in the timber industry. In 1900, New South Wales imported dressed and undressed timber totaling 92,000,000 feet. There are 269 sawmills at work, with a probable output of 175,000,000 feet and of 100,000,000 feet in sleepers, girders, posts, rails, etc. While the imports and the material locally produced reach such gigantic dimensions, the exports altogether did not exceed 17,000,000 feet. No mention is made of the enormous quantity wasted, but a new system of replanting is being inaugurated by the Government, based on that found so successful in our Western States. Should this be properly conducted, the fine forests of Australia will be restocked as fast as the land is denuded, and preserved for the use of posterity.

F. W. GODING,
Consul.

NEWCASTLE, *June 23, 1902.*

AUSTRALIAN EXPORTS TO SOUTH AFRICA.

Consul-General J. P. Bray, of Melbourne, under date of July 11, 1902, sends a list of the principal articles exported from the State of Victoria to South Africa during the year 1901, as follows:

Exports to South Africa in 1901.

Description.		Quantity.		Value.	
		Cape Colony.	Natal.	Cape Colony.	Natal.
Cattle	number	595	731	$22,845	$32,255
Horses	do	1,753	5,104	157,200	491,010
Sheep	do	890	3,326	4,315	16,645
Pigs	do	3	6	10	70
Biscuits	pounds	682,514	939,108	134,445	183,945
Butter	do	2,459,026	3,980,634	573,990	1,016,951
Cheese	do	7,251	7,454	950	915
Eggs	gross	1,113	986	3,280	2,970
Fodder, manufactured	tons	10,344	2,842	308,750	86,745
Barley	cwts	1,948	4,555	2,135	4,850
Oats	do	183,008	728,655	213.475	907,180
Wheat	do	705,702	105,977	812,975	121,625
Bran	do	4,827	27,023	4,655	28,345
Flour	do	53,089	142,583	81,450	218,075
Hay, chaff, and straw	tons	26,558	66,842	524,600	1,240,995
Jams and jellies	pounds	218,368	491,296	17,405	36,600
Leather	cwts	942	93	32,545	3,270
Bacon	pounds	12,011	7,201	1,790	1,115
Ham	do	....	2,695	....	410
Frozen beef	cwts	16,069	1,863	104,660	11,910
Frozen mutton	do	43,611	6,206	255,610	38,815
Frozen pork	do	438	....	4,160	....
Frozen poultry and game	packages	....	....	17,370	37,150
Frozen rabbits and hares	pairs	7,029	3,604	2,045	1,060
Preserved rabbits	pounds	44,712	80,480	4,200	6,830
Preserved meats	do	250,392	398,712	36,785	37,480
Milk:					
Concentrated	do	3,136	126,901	205	8,165
Preserved	do	480	11,050	50	690
Saddlery and harness	packages	....	....	47,000	....
Onions	tons	....	287	....	13,630
Potatoes	do	160	959	4,760	30,840
Specie, gold		....	....	11,250,000	....

LIVE STOCK IN MADAGASCAR AND THE TRANSVAAL.

Business men interested in Madagascar state that a profitable cattle trade may soon be opened between that colony and the Transvaal. The southern part of the island is a rich field for raising cattle, and is good for little else. The cattle now there, owned by the natives, number from 800,000 to 1,000,000. In Madagascar, cattle can be bought for 100 francs ($19.30) per head, or less, and they will sell in the Transvaal for 350 francs ($67.50). Anyone wishing to engage in this business may obtain information by corresponding with M. Louis Jaussaud, Tulear, Madagascar.

It is announced in one of the Paris papers—Le Temps—that 6,000 head of cattle were transported from Majunga, Madagascar, to the Transvaal this year at a profit of 600,000 francs ($115,800).

M. Jaussaud tells me that the shorter and better route is from Tulear, the trip from that port being made in three days, some forty-eight hours less than is needed for the voyage from Majunga. Parties embarking in the business should own a steamer and have capital enough to purchase several thousand head of cattle at once. Many of the native chiefs own as many as 10,000 head of cattle, which they want to sell; and they will know enough to advance their prices whenever appearances indicate the opening of a good market.

A pamphlet issued in June, 1902, by the Transvaal Land Board sets forth the inducements offered to settlers and the special lines of agriculture in which they are expected to engage; but little is said of stock raising.

Prospective farmers, it is noted, should be settled in small colonies numbering 20 or 30 men each. The type of settlement will vary with the character of the district in which it is placed, the individual holdings consisting of irrigated land for tillage, mixed tillage and grazing ground, or larger allotments for grazing, according as circumstances may suggest. In the larger colonies, model farms, managed directly under the government by salaried agents, will be provided. The first colonies will be placed in good districts, with an assured water supply, reasonably near to both railways and markets, and the less promising areas will be occupied only as the country is gradually opened up by more extended irrigation and improved transit. As to the size of the farms, 20 acres is pronounced sufficient for fruit or tobacco farming; and the same extent of ground, well watered and with a certain amount of grazing land added, is the minimum suggested for mixed farming. For stock farming pure and simple, 2,000 acres in a good district, or 3,000 in one not so good in character, is asserted to be the minimum.

A short section of the pamphlet is devoted to observations on the land at the disposal of the government. The best portions are the town lands of certain towns and villages, parts of which will, subject to some compensation, be available for settlement. The government also owns a certain amount of land scattered about the high veldt—suited for stock farms—and a large tract in the south of the Waterberg will be very suitable for settlement, when once the water difficulty has been surmounted. The greater part of the Barberton district is also government property. This is particularly suited for tobacco and subtropical fruit farming, as are parts of the Rustenburg and Bloemhoff districts. Fairly watered farms will be general throughout most of the western district, from Potchefstroom to the Mooi River, along the north bank of the Vaal, and in the Lichtenburg and Zeerust regions.

Some of the French press complain that the cattle trade between Madagascar and the Transvaal has been carried on by English instead of French capitalists. I know that proposals to undertake this business have been rejected by French capitalists. There is still a good opening here for American capital, with unknown future possibilities. The Transvaal is one of the new regions which is destined to grow rapidly in population and wealth, and it is a field where the prospective openings for capital merit careful consideration.

JOHN C. COVERT,
Consul.

LYONS, *July 21, 1902.*

RELEASE OF BOER PRISONERS OF WAR.

Consul W. Morey sends from Colombo, Ceylon, July 3, 1902, copy (printed) of the official announcement in regard to the release of Boer prisoners of war, as follows:

Burghers of the late South African Republic and the late Orange Free State may proceed to South Africa at once at their own expense, on declaring their allegiance and furnishing proofs of possessing means of subsistence.

Burghers may go elsewhere than to South Africa at their own expense, but they will thereby forfeit all claim to eventual repatriation at the expense of His Majesty's Government; and if, without declaring their allegiance, they elect to proceed elsewhere than to South Africa, they will hereafter be prevented from returning to South Africa.

Burghers unable to proceed to South Africa at their own expense will be repatriated by His Majesty's Government on their declaring allegiance and as soon as arrangements can be made for their transport and reception in South Africa.

Foreign prisoners of war, who do not claim to be burghers, will not be allowed to return to South Africa. Such foreigners may at once leave at their own expense if they wish to do so. The others may be handed over to their consuls, if their governments wish to make special arrangements for removing them; otherwise, they must wait till His Majesty's Government find it convenient to repatriate them. Prisoners of war of foreign origin who were naturalized as burghers of the late South African Republic or of the late Orange Free State on or after the 29th of September, 1899, are to be treated as foreigners and not as burghers. Prisoners of foreign origin who can produce satisfactory evidence that they were naturalized as burghers of the late South African Republic or the late Orange Free State before the 29th of September, 1899, will be treated as burghers.

Rebels will be forwarded to South Africa under the charge of the captains of the transports by which they are sent, and on arrival will be handed over, according as they belong to the Cape or Natal, to the authorities whom the governors of the Cape or Natal, respectively, may appoint to receive them.

It must be understood that the repatriation of prisoners must depend on the readiness of the colonial governments to receive them, as the circumstances of the new colonies do not admit of the return of unlimited numbers at one time.

COMMERCIAL MONOPOLIES IN ABYSSINIA.

Through private sources of information, I learn that a business depression exists in Abyssinia, owing to an accumulation of stocks. There seems to be no immediate prospect of the sale of American goods in that Empire other than cottons, locally known as "aboudjedides," and petroleum. One recent order for American agricultural machinery has been placed by A. Savouré et Cie., of Addis-Ababa (Choa), by way of Djibouti, French Somaliland.

As far as trade in Abyssinia proper is concerned, there will be no competition for the next five years, as the house of Livierato Frères, of Marseilles and New York, has purchased the exclusive right to import cottons at the annual rate of 220,000 Maria Theresa thalers (about $103,000), plus the duty of 8 per cent, based upon the selling value in the country of importation. During the same period, the same concern has exclusive control of the return commerce in goat and sheep skins, paying for the same a tribute of 84,000 thalers ($39,480) per annum. My informant, who writes under date of June 16, says that this latter concession is deemed a poor one at the price.

The trade in petroleum is relatively unimportant and is in the hands of natives, who buy their supplies at Aden.

As respects cottons, the mark of the camel is still the most highly esteemed in the Red Sea country. The sale of these cottons are in the hands of Benigha-Menaheim, at Aden. Livierato Frères have a number of marks, the favorites being the lion and head of Menelik.

These and other trade details are carefully studied by German exporting houses, who have their own German representatives among the natives, more particularly on the Asiatic side, and who aim by patient watchfulness to take a hand in trade whenever circumstances are favorable. The American policy is to do all the selling that is to be done in New York—a policy that can not be said to have been a failure, certainly. Of course, the foreign houses have the advantage of being able to obtain cheap labor of an intelligent sort. Methodical office workers can be had in unlimited numbers at from 125 to 250 francs ($24.12 to $48.25) per month, the latter figure being decidedly above the average; consequently, offers to take jobs in Asia and Africa at rather higher wages are readily taken. The Germans have a special aptitude for extending their commercial propaganda, always speaking the native dialect and often wearing the native garment.

ROBERT P. SKINNER,
Consul-General.

MARSEILLES, *July 24, 1902.*

THE ABYSSINIAN MARKET.

In the annual report for last year just issued by the Rouen Chamber of Commerce is a synopsis of a lecture given before the chamber by M. Hugues Le Roux,* a distinguished Frenchman, on the Abyssinian market, from which the following extracts are taken:

> To understand the importance of this market, one must remember that Abyssinia has an elevation varying between 5,000 and 10,000 feet. Gold is found everywhere, but the Négus, fearing the contact of his people with the adventurers of modern civilization, wishes to employ the wisest means in exploiting the mines. Vegetation is abundant, owing to a rich undersoil. The character of the inhabitants is peaceful and kind and their manners simple. Up to the present, the country has resisted the influence of Islamism and remained Christian. The mentality of the people is equal to ours. So far, however, commercial intercourse has been difficult, because the country is separated from the sea by a desert which is crossed with much danger by a caravan, at a price of transport amounting to 1,000 francs ($193) a ton. The Négus has decided to build a railroad from Djibouti to Addis-Ababa, which will permit the crossing in twenty-four hours of a great desert heretofore closed to commerce. With this railroad, French commerce will have an open route into a country which produces coffee, rubber, cotton, and spices and gives to some of its products four harvests a year. Abyssinian commerce represents not less than 50,000,000 francs ($9,650,000) annually. Of cotton, America furnishes 16,000,000 francs' ($3,088,000) worth and England 4,000,000 francs' ($772,000) worth annually. The Americans have captured this market by means of a cottonade very beautiful and solid, but without a fixed price, being exchanged for gold, ivory, or coffee, which takes the place of money. There is no doubt that the opening of the railroad will permit us to compete with the Americans and English, and the Rouen manufacturers have the right to hope that their cottonades will replace those of the latter.
>
> The cloth most known there is unbleached; however, colored cloth is well received. Striped goods are preferred to those with flowers or complicated designs.

THORNWELL HAYNES,
Consul.

ROUEN, *July 17, 1902.*

BICYCLES AND AUTOMOBILES IN ALGERIA.

During the past few months, I have received a number of inquiries as to the present conditions of the bicycle and automobile market, and the future prospects of American trade in this line in Algeria.

Algeria is a country specially adapted to the use of automobiles, both on account of its excellent roads and the steep grades which prevail. As far into the country as roads are built, they are constructed with great care and kept continually in repair. Many of them are military roads adapted for the rapid movement of soldiers, including, of course, artillery and munitions, the railroads being wholly inadequate for such purposes. Other roads are almost as good, owing to the necessity of bringing heavy loads of wine from the vineyards of the interior to the seaboard.

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* See also ADVANCE SHEETS No. 1287 (March 12, 1902); CONSULAR REPORTS No. 260.

On account of the frequent and heavy grades, bicycles are not used here to the same extent as in more level localities. Bicycles are used and American makes are favored, but in my opinion the demand will never be sufficient to induce our manufacturers to make any great effort to control the market.

The city of Algiers has a population of 100,000, about one-half of whom are of Arabic descent and can not be considered as possible purchasers. The other half, of European birth and descent, according to the best obtainable estimate, own 900 automobiles and 300 motocycles. The automobiles are exclusively of French manufacture. The makes are: De France, Dedion-Bauton, Darrack, Paukardt & Lavassar, Chaudal, Morse, Renaud, George Richard, Hurtu, Rochet, Dietrich, Bolide, and Gladiator.

American machines have never been tried here, and it is therefore impossible to give an opinion as to the future prospects for American trade. Aside from a natural prejudice in favor of France, and also the absence of customs duties upon the French article, there is no reason why automobiles manufactured in the United States should not be sold here, as bicycles and many other machines have been sold.

Algerians are favorably disposed to American manufactures of all kinds, especially machinery.

At present, freights from the United States to Algiers are very low. The newly established Levant Line gives bimonthly service between New York and Mediterranean ports. Application for rates should be made to the Hamburg-American Steamship Company, New York City.

The following are the names of prominent concerns dealing in automobiles: Vincent Gérin, rue Waïsse, No. 1; Le Gerrier, rue de Constantine, No. 50; Paul Mayeur, rue de la Liberté, No. 2—all of Algiers; and Mentzer, Boulevard Seguin, 35; and Traut, Place de l'Evêché, Oran, Algeria.

All correspondence with the above firms, and printed or descriptive matter, should be in the French language, and French currency should be used in price lists.

DANIEL S. KIDDER,
Consul.

ALGIERS, *July 5, 1902.*

EASTERN MARKETS FOR COTTON GOODS.

According to recent German reports, England has been, up to the present time, the main exporter of cotton goods to Egypt, although the Italian cotton industry is becoming a successful competitor. In 1900, 12,819,915 yards of cotton cloths, valued at £235,650 Egyptian ($1,142,900), were imported into Egypt from the following countries:

	Yards.
England	5,625,266
Italy	2,838,733
Germany	1,543,933
Austria-Hungary	1,080,177
France	823,728
Belgium	394,179
Turkey	300,534

Among the German imports, the cheap cotton prints were most important, these being manufactured chiefly in the Alsace-Lorraine country and shipped via Genoa, so that it is believed many of them appear on the Egyptian market as Italian goods. Lately, a more expensive stuff with a silk finish has gained considerable prominence in the market. Furniture stuffs are also in demand and are shipped mainly by Italy. It is important that these goods should possess a high gloss and luster and a soft feel to the hand.

At present, a glut is reported in the market of plain, unbleached cotton stuffs, a large quantity of which is supplied by the United States, especially to the Sudan and the Red Sea region. Other articles extensively imported into Egypt are cotton shawls, net lace, tulle, gauze, mosquito netting, curtains, and cotton head shawls. There is an especially good demand for checkered and many-colored cloths.

Among the Chinese in the vicinity of Hongkong, there is a large and expanding market for cheap white cotton hosiery. The exportation of cotton goods to the East takes place largely through houses at points like Hamburg and Paris. There is no question that American manufacturers of cheap cotton half hose can find a market for their products, if the combination of colors which the oriental people desire is carefully observed. Judging by the success of our manufacturers in the South American trade, their chances in the Orient ought to be exceptionally good. A correspondent wrote to me from Alabama some time ago that he was doing a good business with South America in hose, but he wished to learn the combination of colors which the German and French manufacturers were sending to those countries. I succeeded in getting him the exact information, and within a few years he has increased his business with South America from 14,000 dozen to 33,000 dozen per week. American manufacturers ought also to be able to compete in the East with English, French, and German hosiery.

J. F. MONAGHAN,
CHEMNITZ, *July 16, 1902.* *Consul.*

GREEK CURRANTS FOR AMERICAN MARKETS.

Considerable attention is just now centered about the formation of a stock company in this city, with the express object of developing the Greek currant trade with America, but more especially within America. It is probable that such a movement will be of more or less interest to American currant importers and of especial importance to our own growers of this fruit, hence I take occasion to outline the nature and purpose of the company, so far as its formation has progressed at this date.

The impetus for the organization of such a company seems to have arisen in this way: A few days ago, one of the local dailies printed some editorials dealing with currants and the currant trade, and expressly with the further development of the trade with the United States, basing the articles principally upon the statements of a Greek merchant lately returned from New York. This merchant allowed himself many criticisms of the currants shipped by local exporters to the American market, characterizing the qualities for the most part as unfit for our trade and most unlikely to attract a larger consumption on the part of the American people. Not only were the qualities objectionable, he affirmed, but the manner of placing them upon the market was in no way calculated to reach the mass of the people, which Greek exporters feel that they must do if they are to increase the trade in their fruit. As a retailer, he said, he had every reason to know the quality of currants handed over to the smaller merchants for distribution, especially to the working classes; that these were not currants, but the rubbish of every sort incident to currant packing; and that the purchaser of such a grade of goods was never guilty of a second investment.

These and other statements, published with comments in regard to the prevalent fallacy that Greece grows all the currants for the world's markets, coupled with the fact that the Peloponnesus is likely to have more currants this year than she knows what to do with, according to present crop reports, have attracted considerable local attention. The first of a possible series of results is the formation of a company composed of four representative currant exporters and of the Currant Bank of Greece, with a capital stock of £3,000 ($14,600). Who is at the head of the company has not been given out, but it is probable that the Currant Bank itself is most active in its formation. The company proposes to open a distributing center, probably in New York, to put an experienced man in charge of the agency, and to supply Greek currants to the retail and small wholesale trade, to the exclusion of jobbers and large wholesale houses.

Knowing one of the stockholders whose name appeared in connection with the company, I inquired whether the company was actually to be formed, or merely to be talked of for the present. He assured me that the company was already in existence, and a recently published interview with the director of the Currant Bank confirms this, so that there is little doubt that the company will be pushed into activity for the opening market in September. The principal difficulty seems to be in the selection of a suitable representative. There is no intention of putting a Greek or an American in charge, but an English expert is to be secured, if possible.

The fact that the United States consumed, for the year ended June 30, 1902, 18,200 tons of Greek currants, as against 70,500 tons by Great Britain for the same period, is unexplainable to exporters in general, because they will neither believe that America grows her own currants, nor that any market can be satisfied with any but Greek currants. At the same time, the very favorable outlook for a large crop this season is disconcerting, in view of the probable effect upon the market. It is the general belief that the yield will reach almost 175,000 tons; the Currant Bank will, therefore, press its law of retention to the highest point, which means to the growers, small or large, that probably the fifth of their crop will find its way into the storehouses of the bank at practically the cost for labor. In all probability, therefore, a great effort will be made to break into our market with larger quantities than hitherto.

FRANK W. JACKSON,
Consul.

PATRAS, *July 22, 1902.*

NAUTICAL CONGRESS AT SYROS.

A nautical congress will take place in the island of Syros from the 14th to the 19th of September, 1902, at which the following topics will be discussed:

Under what conditions should special schools be founded for the training of captains of merchant vessels, and of engineers capable of managing vessels of large tonnage and on long voyages?

By what regulations and in what way can the uninforced law concerning the mortgaging of ships be modified so as to bring it again into force?

On what basis can a nautical bank be established in Greece?

What system of insuring merchandise would be best for Greece, and under what conditions would it succeed?

In what way can the Government promote the building of ships in Greece?

In order to improve and develop commercial shipping, what modifications should be introduced in the regulations of the nautical-commerce law of Greece?

LOUIS NICOLAÏDES,
Acting Consul.

ATHENS, *August 4, 1902.*

CHROME IN TURKEY.

Chrome is found in both European and Asiatic Turkey in considerable quantities, but only districts within easy reach of the sea have been worked. The principal workings are in the neighborhood of Salonica, Broussa, and Macri. The largest deposits are said to be in the district of Denislie, but the Government has given no permits to work this region. The Denislie ore has yielded in tests as high as 56 per cent of peroxide of chrome, and is a surface deposit. This district has recently been discovered and is supposed to be a continuation of the Macri chrome stratification. The deposits are some distance from the railroad, and the cost of transport to Chardak, the nearest station on the Smyrna Ottoman Railroad, is close to 36s. ($8.86). The Broussa mines are comparatively new, and most of their output has gone to the United States. The proprietor of the Broussa mines is Ragoub Bey, a functionary in the Sultan's palace. Most of this ore is handled by J. W. Whittal & Co., of Constantinople, who are the agents of Ragoub Bey. The Bey has an advantage over his competitors, as he pays no royalty, the mines having been made a present to him by the Sultan.

The Macri district is controlled by Paterson & Co., of Smyrna, who own a number of mines and "permits of research." They also hold mines at Salonica and Broussa.

The Government collects a mining royalty of 20 per cent on chrome, and a customs duty of 1 per cent. The transportation is usually done by camels. For the Macri ore, transport from the mines to the sea costs from 10s. to 15s. ($2.43 to $3.65) per ton. The cost of extraction averages about 6s. ($1.46) per ton, and shipping expenses, besides customs duty, 1½s. (36.5 cents) per ton.

Thus the costs for the Macri ore are:

	s.	d.	
Extraction	6	0	=$1.46
Transport to sea (average)	13	0	= 3.16
Government royalty	14	0	= 3.40
Customs export duty	0	9	= .18
Shipping expense	1	6	= .365
Cost f. o. b. Macri	35	3	= 8.575

It is claimed that the Macri mines are nearly exhausted of their high-grade ore, but there is plenty of low-grade ore testing about 40 per cent of peroxide of chrome. From the Broussa district, ore reaches the sea by rail, and this additional expense makes the cost of production about 48s. 3d. ($11.74) f. o. b. Ismid, the seaport for Broussa.

Chrome is found in pockets of variable quantities, scattered indiscriminately over Asia Minor; but the great majority remain unworked, owing to lack of roads and other difficulties in the way of transport. The ore is frequently mixed with gang rock (serpentine), and only of late years have any experiments been made looking to the separation of the chrome from the refuse. Chrome is usually mined in open workings. In the Macri district, owing to winter rains, the work is carried on only in spring, summer, and autumn. Native labor is used, which costs about 18 cents per day.

During the last two years, no new mining concessions have been granted, and for the present the Turkish Government only issues shipping permits for 2,000 tons for any new mine, and when this permit has been exhausted a new one must be obtained before the work can be continued. There is a tendency on the part of the Government to prevent mining properties from passing into the hands of foreigners. The actual title of any mine in Turkey must rest in the name of a Turkish subject. Mining rights do not go with a piece of land bought for agricultural purposes. The Government has, on numerous occasions, disposed of farm land to one person and the mining rights to another. The mining laws have been modified within the last two years, but the new code has not been accepted by the European powers and remains in abeyance.

RUFUS W. LANE,
Consul.

SMYRNA, *July 23, 1902.*

AMERICAN PIANOS IN MALTA.

I have every reason to believe that Malta will eventually prove a good buyer of American pianos. Although the population is but a little less than 200,000, a great many pianos are used, the Maltese being experts in instrumental music. The instruments come from

England, France, and Germany, the average retail price being about $125. Of course, there are many instances in which higher-priced pianos are bought.

I have just received a letter from one of the foremost dealers and teachers in the islands, who in the course of a year has the opportunity to dispose of many instruments. He says:

> I sincerely trust you will be able to secure for me a connection as local representative of some piano manufacturer of good repute, who would be willing to send me a few instruments for sale on his account. I am sure I could soon dispose of them, if prices are reasonable. As you know, my clientele is made up of the aristocracy of the several communities here. My position is secure, and therefore all transactions will be perfectly safe. I am anxious to be the first to introduce American goods of this line into Malta.

The name of the writer of this letter may be secured from the Chief of the Bureau of Foreign Commerce, Department of State, Washington, D. C. Should anyone interested in the matter desire to see me personally, in order to gain further information, while I am on leave of absence in this country, my address may be obtained from the Department, and I shall be pleased to assist in any way that I can.

JOHN H. GROUT,
Consul at Malta.

BOSTON, *August 5, 1902.*

ELECTRO-TECHNICAL INDUSTRY IN RUSSIA.

Until recent times, the electric industry has made extremely slow progress in Russia. Unfavorable circumstances have combined to impede the industry and prevent it from reaching the level found in other countries. One of the principal causes of this lack of development was the absence of schools in which to educate electricians. Foreign engineers and specialists prefer to have recourse to materials and apparatus made abroad, of which they know the value, rather than to try to build factories and works in Russia for the production of the articles required by them. Of late, however, the Government, private companies, and individuals have opened special schools for electricians; and, in addition, the special art and artisan schools have introduced an electro-technical course. The influence of these special schools and courses has not been slow to make itself felt, and of recent years electric industry has made immense progress. Many towns and cities are lighted by electricity, and electric tramways are numerous. Nearly all of the large factories and industrial establishments have adopted electric lighting and have applied electricity to the distribution of motive power. Electric energy has also been utilized in mining enterprises, particularly in the south of Russia. The use of electricity in soldering, in the extraction and refining of metals, as well as in certain electrochemical works, and in the production of carbons and hypochlorites, is now well developed in Russia. With the increased and varied applications, the demand for apparatus has grown enormously, and dynamo machines, motors, transformers, lamps, conductors, armatures, etc., find a large sale. In response to this demand, workshops and factories have been established which produce more particularly the accessory supplies and conductors. There are but two factories in Russia which produce electro machines and lamps, and in consequence most of these are imported. Germany and Switzerland furnish the largest number; next comes England, and then follow the United States, France, and Belgium. Statistics on the subject are not obtainable at the present time. It is possible, however, to estimate approximately the situation of certain branches of electrotechnical industry in Russia, and this estimate is undoubtedly below the actual condition.

ELECTRIC LIGHTS.

A few years only have passed since such cities as St. Petersburg and Moscow began to have their streets lighted by electricity. At present, there are more than fifty towns which employ the electric light, and many other places are erecting the necessary apparatus. The rapidity with which the use of electricity has spread at St. Petersburg will serve as an example of the popularity of this manner of lighting. The first central station was installed in the city in 1881. The power of that station was about 250 kilowatts. Until 1885, there were only a few stations opened, and the power increased very slowly. After that year, the power of the stations and their number grew rapidly, and in 1898 there were 169 stations, having together 29,000 kilowatts of power. In 1898 and 1899, three additional central stations were constructed in St. Petersburg, and at the present time the power of all the central stations taken together (exclusive of the private stations) reaches 15,000 kilowatts. Work near completion will raise the power at these stations to 30,000 kilowatts. The number of private stations is about 300, and these have a total power of more than 39,000 kilowatts. St. Petersburg is lighted by means of arc lamps on the principal streets and by incandescent lamps on ways of less importance. In addition to the arc lamps on the streets, there are about 300 lamps fed from private stations. Electromotors having a power of about 4,500 kilowatts have been constructed. In many of the private stations, accumulation batteries have been put up, and their capacity exceeds 50,000 ampere hours. The number of dynamo machines erected at these stations is over 500. As a rule, the current is continuous. Steam motors are principally employed, but gas motors and petroleum motors are also in use.

All of the large stations work with alternating currents, and one of them uses the triphase current. The greater part of the network is underground and consists of armored cables. Air conductors are not in use, except at a few stations. The aggregate length of the network is over 625 miles. The tension of the current of this network is from 2,000 to 3,000 volts.

In Moscow and in other towns, both large and small (particularly those situated in the industrial region), the use of electricity has made no less rapid progress than in St. Petersburg. In the begining, the stations constructed were almost all for the continuous current, but in the later ones the preference was for the monophase and triphase alternating current. The network is sometimes underground and sometimes overhead.

ELECTRIC TRACTION.

Electricity is also coming largely into use for tramways. The first electric tramway built in Russia was the one at Kief, which dates from 1893. In 1898, 45 cities had constructed such lines, their length exceeded 312 miles, and nearly 10,000 kilowatts were in use for the motors. The number of motor cars was about 300 and there were many cars without motors. Most of the tramways are worked by a continuous current. The total length of wire for the electric tramways in St. Petersburg is estimated at 1,875 miles. Air conductors and underground conductors will be used, and, on the principal streets, accumulation traction. Nearly 400 motor cars will be in use, and 300 without motors. Other cities also contemplate the employment of electricity on a large scale, and plans are under consideration for its use on the great railroads of Russia. These projects include the construction of an electric railroad to connect neighboring towns on the western frontier of Russia, and the establishment of a road to cross the Caucasus Mountains, between the town of Suhkum and one of the stations of the Vladikavkas Railway. For this latter road, it is proposed to utilize the hydraulic force of the mountain streams. Electric traction is already in use on the railroads serving large factories, in the mining industry, and in other enterprises.

The use of electricity for the distribution of motive power is spreading, and to-day all of the machine works of Russia have adopted this method. Enormous central stations have been erected at places where such factories exist; for instance, at the Kolomna machine shops, at the works of the Sormovo Association, at the Putilov works, and many others. All of the larger elevators on the Vladikavkas Railway and on the Moscow-Kazan Railway are supplied with electric motors. Up to the present, electricity has scarcely been used at all for the transmission of energy for great distances. Projects, however, are under way to utilize the waterfalls of Narva and Imatra. The Russian Government has granted a concession to a company to supply power to St. Petersburg from the Volhov rapids. The estimated cost of the enterprise is about $14,000,000. It is said that the power to be transmitted will equal 150,000 kilowatts, and the maximum transmission distance is 188 miles. The company has undertaken to provide the public lighting of St. Petersburg gratuitously, and hopes to furnish current to individuals at about half the price hitherto charged in similar enterprises. The engineer of the scheme is a Russian named M. Dobrotvorsky. It is also intended to use the colossal force of the Dnieper cataracts for the transmission of energy.

ELECTRO-CHEMICAL INDUSTRY.

The progress of the electro-chemical industry and of electro-metallurgy is interwoven with the utilization of hydraulic force as motive power. For instance, there are even now several establishments which obtain copper and refine metal by the electrolytic process. Such establishments exist in the Ural and the Caucasus, and have an output that is important. Thus, the works of Siemens Brothers, at Kedabeg, in the Caucasus, annually produce some 500 tons of copper. Many less-important works in St. Petersburg, Moscow, Nizhni Novgorod, etc., utilize steam power for the refining of copper and impure copper waste by the electrolytic process. Some of these works obtain as by-products of the electrolytic process other metals, such as lead, antimony, etc. There are as yet very few special electro-chemical works in Russia; one factory near the Imatra rapids produces carbide of calcium, and other works for a similar purpose also exist. A large electro-chemical factory has been erected in the government of Kharkof, for the production of caustic soda. Electric soldering is in use in metallurgical and mechanical works, and also in the railway shops; this is accomplished with the aid of the Volta arc, a Russian invention. It is said to be superior to the ordinary process of welding by fire, and is in use in 70 important machine works in western Europe.

ELECTRIC APPLIANCES AND MACHINES.

It will be seen that the application of electricity has progressed in Russia, and that electro-technical appliances will have a great future in this country. Russian factories can not supply the demand, and the deficiency is made up by foreign firms which have their representatives here. It is true that Russian manufacturers produce many cables and insulated conductors. At St. Petersburg and Moscow, there are a number of factories in this line and their output compares favorably with the foreign articles. The most important of these establishments is the Siemens and the Riben, both of which produce cables of the most complicated character. Nevertheless, cables in large quantities are imported from abroad, the home manufacturers not being able to supply the market. Accumulators are also manufactured in various towns in Russia. There are a number of establishments in St. Petersburg which produce accumulators of original design or after the best-known foreign models, such as the Julien, the Tudor, and others; and the importation is small. Such appliances as circuit breakers, commutators, rheostats, and carriages, as well as armatures for lamps, are also manufactured in Russia, but not nearly enough to supply the demand. Measuring and counting instruments are scarcely manufactured at all in this country, although the demand for them is enormous, especially of late, since central stations have been constructed in a number of towns. These instruments are imported from France and Germany. The manufacture of porcelain insulators and of porcelain appurtenances in general is so largely developed in Russia as to completely satisfy the home demand, and no insulators are imported. Incandescent lamps are not manufactured in Russia at present; an establishment formerly existed for the manufacture of these lamps, but foreign competition was so strong that the attempt was abandoned. The lamps are at present imported from Germany, France, England, Austria, and Sweden. Arc lamps are produced in this country, but only in limited quantities, and the greater number of those used are imported from Germany. Carbons for the arc lamps are also manufactured in Russia, though most of them come from abroad.

As regards electric machines, such as dynamos, motors, and transformers, they are manufactured by only one firm—Siemens & Halske, at St. Petersburg. This house makes annually dynamo machines and motors of which the aggregate strength is about 6,000 kilowatts. It is also the only firm in Russia which produces appliances required in electric traction.

One branch of the electro-technical industry is fully supplied by the home manufacturers, and that is the signaling and telegraphic apparatus in use on the railways, to indicate whether the road is open or closed. As regards telegraphic appliances proper, some are manufactured in Russia and some come from abroad, chiefly from Sweden and Germany.

HOW TO EXTEND UNITED STATES TRADE.

It will thus be seen that the demand for electro-technical apparatus and machines in Russia is relatively but little satisfied by the home manufacturers, and the progress in the application of electricity for transportation, manufacturing, and domestic economy will undoubtedly enormously increase the market for foreign appliances.

American manufacturers should have their share of this trade, and there is but one way to secure it—that is, to establish branch houses in this country and place the same in the hands of competent men. The Germans hold the field in supplying this country with electric appliances, because they are ever present and always patient; they study their customers, ascertain their financial condition, give long credit with reasonable interest, and employ men who are either German-speaking Russians or Germans born in Russia, who of course speak both Russian and German.

It will require more than a casual visit to Russia on the part of our business men, if we are to win our proper share of the future business to be done in electrical appliances. It is not too much to say that in no other branch of trade is there likely to be such material progress in Russia.

THOS. E. HEENAN,
Consul.

ODESSA, *July 12, 1902.*

BOUNTIES FOR RUSSIAN SHIPBUILDING.

The council of mercantile marine affairs has had under discussion measures to develop Russian shipbuilding. It is proposed to issue loans or bounties to shipowners to induce them to build ships at home rather than have them built abroad and to stimulate the purchase of Russian ships built of Russian material. This will be accomplished by a mortgage on the completed vessel at 50 per cent of the actual cost, without interest, for a period not exceeding twenty years, in equal yearly payments. The cost is ascertained by estimating the expense of building ships in Russia according to certain regulations. The amount of the bounty depends upon the difference between the cost of building ships in Russia and abroad. The loans are issued to seagoing steamships under the following conditions: (*a*) Plans and specifications of ships must be presented to the Minister of Finance; (*b*) the steamers must rank in the highest class, according to the British Lloyd's regulations; (*c*) the average speed of boats of over 1,000 tons register must be not less than 10 knots on six hours' trial; of under 1,000 tons, not less than 8 knots at Lloyd's lower load line.

To enable shipowners to repay the loans, two measures are proposed: First, the loans will be on long time—twenty years—without interest; second, the Government will bear part of the expense of insurance. To facilitate the export of Russian goods by steamers built in Russia, it is proposed to allow a rebate of half the expense for Russian coal used on all steamers carrying less than three-fourths of a full cargo on export and one-half of a cargo on import.

It is estimated that the unavoidable drafts on the Government treasury by these plans to foster home shipbuilding will not be so large as they would be by payment of direct navigation and shipbuilding premiums.

The regulations were discussed at length, and they were considered ready to be sanctioned by the Government council, but it was decided that the entire project must first be published in the press of the Empire for remarks, criticisms, or suggestions from persons interested. This is done on account of the diversity of interests involved.

Meanwhile, to supplement this plan, all Russian merchant ships will be registered and a comparative statement of methods of navigation in Russia and abroad will be compiled.

R. T. GREENER,
Commercial Agent.

VLADIVOSTOCK, *July 6, 1902.*

RUSSIA'S EXPORT OF POULTRY.

A special committee has been appointed by the Agricultural Department to promote the exportation of beef, eggs, fowls, butter, etc., from Russia to the English markets. The president of the committee has visited England and investigated the markets there, and has found an excellent opening for Russian products.

From the data given, England imported last year eggs to the value of $25,830,000, of which the import from Russia amounted to $5,675,000. In regard to poultry, England appears to be one of the largest consumers in Europe. In 1901, it imported poultry and game to the value of $4,609,475, the greater part of which came from France, and then from Russia, Belgium, Holland, and Denmark.

In 1901, the exports of Russia in this line amounted to 46,622,000 rubles, or $23,311,000, classified as follows:

Description.	Value.	
	Rubles.	
Eggs	35,392,000	$17,696,000
White and yolk of eggs	1,839,000	969,500
Down and feathers	150,000	75,000
Dressed poultry	2,513,000	1,256,500
Live geese	5,560,000	2,780,000
All other live poultry	1,168,000	584,000

SAMUEL SMITH,
Consul.

MOSCOW, *July 15, 1902.*

THE TOBACCO TRAFFIC IN AUSTRIA.

The tobacco traffic is a Government monopoly in Austria. All the cigars, cigarettes, etc., are either made in Government factories or are imported by the Government. The sale is conducted through licensed agents, whose number is limited and whose location is prescribed so that competition shall not prevent a lucrative business. The traffic is supervised by an official whose jurisdiction covers a specific territory subdivided among a number of assistants. The tobacco product is bought by the licensed dealers from these officials, and must be sold to the consumer at prices fixed by law, which yield to the seller about 10 per cent profit from the cheapest and 5 per cent from the dearest cigars. Hotels and restaurants, which seldom possess a license, must purchase tobacco of the licensed dealers and pay the same prices as individuals. They can fix their own selling price, however, which they do by adding 1 kreutzer (0.4 cent) to the legal price of a cigar or cigarette.

The cheapest domestic cigar costs 0.6 cent; the dearest, 3.6 cents. The price for a thousand or a million is at the same rate. Each of the different kinds of cigars has a distinctive name, and as it never varies in flavor or quality, the purchaser always knows exactly what he will get for his money.

The tobacco for the domestic product is grown in the southern provinces of Austria-Hungary, in Egypt, and in Turkey, though the better grade of domestic cigars is made partly of Cuban tobacco.

From the official statistics of the Austrian tobacco industry for 1901, just published, it appears that the gross value of the product sold was 213,989,863 crowns ($43,439,942)—an increase of 3,000,000 crowns ($609,000), or 1.4 per cent over 1900. The average yearly increase for the preceding decade was over 5,000,000 crowns ($1,015,000); therefore, last year's traffic showed a relative decrease, owing, it is presumed, to the general business depression. The decline was specially apparent in this Kingdom—Bohemia—where the increase fell from the average of 3.4 per cent to one-half of 1 per cent. The sale of cigars in Austria positively decreased 1.5 per cent in number and 1.8 per cent in value in 1901, as compared with 1900, while cigarettes—being cheaper—showed the marked increase of 6.8 per cent in number and 7.5 per cent in value.

FRANK W. MAHIN,
Consul.

REICHENBERG, *July 21, 1902.*

ARTIFICIAL INDIGO.

The first artificial indigo was made by Prof. Adolf V. Bayer, of Munich, in 1879. The material used was orthonitrophenylpropriolsaeure (an inorganic acid of which nitrogen and phenol are chief elements). The process was acquired by two important German factories, but after a few years of costly experiments they were forced to cease their efforts, the expense of the materials alone being greater than the selling price of genuine indigo. Then followed twenty years of earnest labor and diligent research to discover practical means of producing artificial indigo. Over 200 patents were taken out. German dye factories spared no time, pains, or expense to solve the problem. The chemical constitution of indigo was fathomed, but the right material with which to make it was not forthcoming.

In many of the experiments, toluol, a coal-tar product allied to benzole, was used. It was an interesting but useless effort, because the available toluol was sufficient to produce only 1,500,000 kilograms (3,306,900 pounds) of indigo, while the world's consumption of indigo was estimated at 5,000,000 kilograms (11,023,000 pounds).

Finally, Prof. Karl Heumann, of Zurich, made the important discovery that naphthalene could be used as the raw material for artificial indigo. Naphthalene is much employed in the production of colored stuffs and in various other industrial processes, and is declared to be obtainable from coal tar in sufficient quantities to cover the world's consumption of indigo.

Exactly how naphthalene yields a practicable indigo; what chemical operations are utilized; what substances must first be produced in order to obtain the desired article easily, cheaply, and pure in quality—all these facts are withheld from the general public in the interest of the factories which are engaged in costly experiments. It is said that the aniline and soda factory at Ludwigshafen has alone invested 18,000,000 marks ($4,284,000) in equipping and conducting an indigo-making department.

The employment of artificial indigo is spreading. Advantages are claimed for it over the genuine article—for instance, that it is always the same and it is free from objectionable mixtures, and therefore pleasanter to use and purer in its coloring. The sanguine prophecy is added that it is merely a question of time when artificial indigo will be used not only generally, but solely.

FRANK W. MAHIN,
Consul.

REICHENBERG, *July 14, 1902.*

MARBLE AND MARBLE PRODUCTS IN HUNGARY.

The daily papers report that in Gyergyó, a town in one of the Transylvania counties of eastern Hungary, there is great poverty and famine among the Szekler inhabitants. Yet that district is full of a rich material that is in constant demand, viz, marble.

The marble quarries of Greece, it is said, are exhausted, hence the decadence in architecture, art, and stone industry in that country. Upper Italy now supplies the world with its products. Marble is also found in the district of Laaz, in the Tyrol, a province of Austria, near Italy, and in Silesia, one of the northern provinces of the same Empire.

Transylvania, the eastern portion of Hungary, is rich in marble of the finest qualities; yet Hungary imports almost $600,000 worth of marble every year, mostly in the form of gravestones. The Hungarian stone industry has developed but little, though there is a steady demand for everything in the marble line from the neighboring country of Russia. All its churches, palaces, and public buildings are profusely decorated with marble, which, owing to the lack of Russian quarries, has to be imported. As there are no high-grade quarries in Servia, Bulgaria, or Turkey, the opening for Hungarian marble is considered most promising. The results obtained with Hungarian marble in the new Parliament House and Palace of Justice at Budapest are admirable.

A peculiar fact about marble—perhaps more true in Europe than in America—is that objects made of this material remain intact through long periods of time, unless transshipped to countries of different climate. Objects of Carrara marble brought to Hungary are easily ruined by the elements, although they are often protected by wooden coverings.

It is proposed to put the Szekler people of Transylvanian Hungary into possession of tools of the finer sort, such as are required in marble work. There are already two State industrial schools in Szekely, and these will be supplemented by workshops in the districts where the marble is found. The output will, it is believed, finally exclude the foreign product.

During the year 1900, Hungary imported from Austria "Karst" marble, crude and rough cut, to the amount of 955,253 pounds, at a value of $5,277.59.

Other marbles, crude, rough cut, and marble dust, were imported from the following:

Whence imported.	Quantity.	Value.
	Pounds.	
Belgium	2,278,454	$31,470.08
Italy	2,065,489	22,822.88
Austria	1,033,737	7,604.94
Servia	178,132	1,312.19
Germany and Luxemburg	144,622	1,065.34
France	61,288	677.21
Trieste	22,928	168.90
Roumania	220	3.05

It will be seen from the above table that the average value of the Karst marble was only 55 cents per 100 pounds, and that the average value of the other marble imported varied, as follows:

Belgian and Roumanian	per 100 pounds	$1.38
Italian and French	do	1.10
All other countries	do	.74

FRANK DYER CHESTER,
Consul.

BUDAPEST, *July 30, 1902.*

GERMAN MEAT INSPECTION.

Ambassador Andrew D. White reports from Berlin, July 12 and 14, 1902, that according to an official proclamation the meat-inspection law will go into force in its entirety on April 1, 1903, with the exception of the section which relates to doing away with the second examination of meat once officially inspected. This paragraph will not go into effect until October 1, 1904.

The following report on the new regulations has been received from Consul-General Richard Guenther, of Frankfort:

As the time is approaching when the new regulations concerning the importation of meat and its transportation in transit through Germany will go into force, it will be well to note the following:* It is prohibited to import into Germany—

> Meat in hermetically sealed boxes and similar vessels, as well as sausages and other mixtures of chopped meats; dog meat; also prepared meat of horses, asses, mules, and other solipeds; meats which have been treated with one of the following substances or with a preparation containing such: Boracic acid and its salts, formaldehyde, hydrooxides and carbonates of alkalis, sulphurous acid and its salts, hypsulphurous salts, fluor-hydrogen and its salts, salicylic acid and its salts, chloride salts, and coloring substances of whatever nature. The latter, however, may be employed for coloring coverings, if not otherwise prohibited.

Fresh meat may be imported into Germany in whole carcasses only, which if of cattle (calves excepted) or hogs may be in halves.

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*See also ADVANCE SHEETS No. 1394 (July 17, 1902).

Calves must not weigh more than 165 pounds. With the carcasses, the pleura, peritoneum, lungs, heart, kidneys, and the udder and lymphatic glands, if of cows, must be naturally connected. Carcasses divided into halves must be packed together, and must be so marked and numbered that it becomes at once apparent that the halves belong together.

With cattle (calves excepted), the head or the lower jaw and the masticating muscles must be connected with the carcasses in the natural state; with hogs, the head with the tongue and the head of the windpipe—the brain and eyes may be missing. With cattle, the head may be separated from the carcass, provided the head and the carcass are so marked or numbered that it is at once apparent that they belong together.

With carcasses of horses, asses, mules, and other solipeds, the head, the upper part of the windpipe, and the windpipe, as well as the whole skin, must be connected in at least one place in its natural state, in addition to the pleura, peritoneum, lungs, heart, and kidneys.

Pickled and salted meats, with the exception of ham, bacon, and intestines, may be imported only if the weight of the separate pieces is not less than 8.8 pounds. Smoked meat which has been subjected to a pickling process is to be treated as pickled meat. Meat which has been lawfully inspected in Germany (which fact must be established) and has been exported is not subject to an official examination if reimported.

The immediate transportation in transit under a customs escort or in bond (if by mail, without these restrictions) is not to be considered as importation under the law; such meat in transit is not subject to the provisions of the law, but it must not remain longer in Germany than is necessary. If meats are stored in a customs warehouse, they are not to be considered as for "immediate transportation."

FEES FOR INSPECTING MEAT IN GERMANY.

The Department has received from Ambassador Andrew D. White, of Berlin, under date of July 19, 1902, copies of the official proclamation with regard to the fees to be charged for the inspection of meat imported into Germany from abroad.* A translation of the principal paragraphs follows:

(1) These fees embrace especially compensation for the removal and transport of samples, for notifications, registering in the inspection books, drawing up of certificates, and the traveling on the part of experts that may be necessary.

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*A report on the same subject has been received from Consul J. F. Monaghan, of Chemnitz.

(2) The fees, apart from the fixed fees for special inspection in paragraphs 4 to 6, amount to:

Description.	Fees.	
	Marks.	*Cents.*
A.—For fresh meat.		
(1) Horned cattle (exclusive of calves)......per head...	2.50	59.5
(2) Calf......do......	.75	17.8
(3) Hog or wild boar......do......	.75	17.8
(4) Sheep or goat......do......	.60	14.2
(5) Horse or other soliped (donkey, ass, mule)......do......	3.00	71.4
B.—For dressed meat (with the exception of fat).		
(6) Intestines......per kilogram (2.2 pounds)...	.01	.24
(7) Bacon......do......	.02	.47
(8) Other dressed meat......do......	.025	.6
For any consignment of intestines, at least......do......	.40	9.5
Other dressed meat, at least......do.....	.50	11.9

In dissimilar consignments, or when, in case of appeals from a test, the inspection has to be carried out for the entire consignment, the fees under *B*, 6 to 8, are to be doubled.

(3) The preparation of meat for inspection (taking out intestines, detaching fat from the inside, cutting hogs in halves, hanging up or laying out of parts of meat in inspection rooms), if it does not take place through the authorized authorities, will be subject to an additional charge of 20 per cent on the fees already provided.

(4) Fees for the inspection for trichinæ are:

Description.	Fees.	
	Marks.	*Cents.*
(1) For the entire hog or wild boar......	1.00	23.8
(2) For a single piece of meat, except bacon (hams, pieces of salt meat, and the like)..	.50	11.9
(3) For bacon......per piece...	.35	8.3

Special fees are not to be levied for the assistants.

(5) Without prejudice to the provisions of paragraph 6, the fee for the chemical inspection of dressed meats, except fat, is 2 pfennigs (0.476 cent); for the chemical inspection of prepared fats, inclusive of previous examination, 1 pfennig (0.238 cent) per kilogram (2.2 pounds). The smallest fee for the chemical inspection of meat is 1 mark (23.8 cents) and for fat 40 pfennigs (9.5 cents) for every package of the consignment. With dissimilar consignments, or when in case of appeals an inspection of the entire consignment is necessary, the fees are to be doubled.

(6) For the chemical inspection of dressed meat, to detect the presence of horse meat, when this is proven by the inspection, a fee of 15 pfennigs (3.57 cents) is assessed for every kilogram (2.2 pounds) of the consignment. For the inspection of hams, in consignments of less than ten pieces, of bacon and of intestines, or of fresh meat, in case of the presence of materials named in section 5, No. 3, of export classification *D*, a fee of 5 pfennigs (1.19 cents) is assessed under like stipulations for every kilogram (2.2 pounds) of the consignment. The minimum fee for inspection to detect the presence of horse meat shall be 15 marks ($3.57), and for the presence of forbidden materials, 2.50 marks (59.5 cents) per consignment.

(7) The net weight is the basis for computing inspection fees. If it is necessary to ascertain this weight, it is to be computed according to the prescribed customs regulations.

(8) In case the consignment is voluntarily withdrawn on the ground of appeals,

the fees fixed in paragraph 2 under *B*, 6 to 8, and those in paragraph 4 are to be levied only on that part of the consignment in which the inspection has already been made.

In like manner, the fees fixed in paragraph 5 are to be divided in half, if at the time of withdrawal not more than the half of the meat has undergone chemical inspection.

MEAT-INSPECTION EXPENSES IN GERMANY.

The Frankfort Zeitung, of August 5, contains an analysis of the methods prescribed for assessing official fees for the inspection of lard and meats under the new law of June 3, 1900, which, as has been heretofore explained, will enter into full effect from the 1st of October this year.

The article deals especially with the additional expenses that will be added to the cost of meats, both native and imported, under the new system, and the following deductions are substantially translated from it as of presumable interest in the United States. In respect to lard, the Zeitung says:

In a shipment of 1,000 tubs of lard, each containing 12.5 kilograms (27.55 pounds) net, 27 tubs will have to be opened, and from the whole number samples of 250 grams (about half a pound) will be taken. Six of these samples will then be submitted to examination to prove whether they are pure lard and contain no adulteration or antiseptic preservative. After this inspection each package in the entire shipment will be stamped with two seals. The cost of each analysis will be 10 marks ($2.38), and for sampling and stamping each package, 1 pfennig (0.238 cent), which will amount in all to 75 marks ($17.85).

In respect to small pork shoulders, which weigh on an average 3 kilograms (6.6 pounds)—that is, 100 pieces weighing 300 kilograms (661 pounds)—the 100 pieces would pay for inspection fees as follows:

	Marks.
(*a*) For the general inspection	7.50=$1.78
(*b*) Examination for prohibited preserving materials	6.00= 1.43
(*c*) Examination for trichinæ	50.00=11.90
Total	63.50=15.11

Or 21 marks ($5) per 100 kilograms (220 pounds). To this must be added the duty, 17 marks ($4.04), so that a grade of meats, the price of which has been during the past five years about 55 marks ($13) per dozen pieces, will have to pay in duty and inspection fees 38 marks ($9.04).

The same is true of the full-grown bacon "bellies," which are imported in pieces of 4 to 5 kilograms (8.8 to 11 pounds) weight, and in the meaning of the meat-inspection law would be classed as pickled meat. As such it will be subject to the same charges as the above-cited shoulders, and will cost in fees for 100 pieces weighing net 450 kilograms (992 pounds):

	Marks.
(*a*) For general inspection	11.25=$2.87
(*b*) For chemical examination	9.00= 2.14
(*c*) For inspection for trichinæ	50.00=11.90
Total	70.25=16.91

Or 15.50 marks ($3.68) per 100 kilograms (220 pounds). To this amount must be added the duty, 20 marks ($4.76)—in all, 35.50 marks ($8.44) per 100 kilograms (220 pounds) for duty and importation charges.

The net effect of the new system, as illustrated by these examples, will be to restrict the supply of meat and more or less advance its price in the markets of Germany.

FRANK H. MASON,
Consul-General.

BERLIN, *August 9, 1902.*

THE EXPRESS TRAIN OF THE FUTURE.

In a report of this series written in April last,* summing up concisely the practical results of the experiments in high-speed electrical traction made last autumn on the specially prepared military railway line between Berlin and Zossen, the fact was noted that as a more or less direct corollary to those tests, the German Society of Mechanical Engineers had offered a series of prizes for the best design and specifications for a steam locomotive and group of cars, which would collectively form an express train capable of carrying 100 passengers and their baggage with personal comfort and at a speed of 75 miles an hour. The purpose of this competition, as was then stated, is to provide a unit of the equipment for the attainment of greatly accelerated speed in railway travel, which can be adapted to the present State railways of Prussia without the tearing up and relaying of tracks with heavier ties and rails that would be required for rapid electrical service.

An interesting forecast of the pending competition has been given by Mr. Arthur Kirchhoff, editor of a technical publication in Berlin devoted to engineering and machinery, in which a description is given of certain features of the new locomotives, which are to be tested over the Berlin-Zossen line next year. The specifications require that this express engine and train of the future shall be able to maintain for three consecutive hours a speed of 120 kilometers (74.5 miles) an hour, without stopping for water or fuel, and at a minimum expenditure of motive power. Mr. Kirchhoff's outline of how this is to be done will have a definite interest to American engineers.

During the experiments of last autumn, an attempt was made to determine as accurately as possible the waste of power entailed by the friction and resistance of air to railway trains at different rates of speed. It was found that while at a speed of 80 kilometers (50 miles) per hour this resistance on a still day was about 32 kilograms

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*ADVANCE SHEETS NO. 1333; CONSULAR REPORTS NO. 262.

(67.2 pounds) per square meter of the surface of the front end of the car, the rate increased very rapidly with the augmentation of speed, so that at a pace of 150 kilometers (93.7 miles) the resistance rose to 75 kilograms (157.5 pounds) per square meter of impinging surface Every projecting part, every window, door, or other indentation which could form a pocket to catch the wind created by such high velocities, increased the resistance to be overcome, so that in all future experiments, the economy of rapid transit will require that the factor of air resistance shall be taken into careful account. This, according to Mr. Kirchhoff, is to be done by enveloping the engine and train, from pilot to rear platform, in a shell of sheet steel, jointed so as to secure flexibility in passing curves, and so constructed as to inclose the locomotive and cars in a continuous tube, uniform throughout in size and presenting no projecting irregularity which shall catch the resisting air. The front of the engine will be pointed or wedge-shaped, the sheath will inclose as far as possible the running gear of the cars, and even the wheels of both engine and cars will be closed disks of metal instead of, as now, spoked wheels with openings to catch the air.

It will be remembered that in the recent experiments on the Zossen line, the electric motors, conductors, and transformers worked to the entire satisfaction of the experts in charge, and that the maximum practicable speed and the consequent success of the trials were limited only by the track, which gave way rapidly when a speed exceeding 70 miles an hour was attained. This was indeed the unexpected and most important fact brought out by the trials, viz, that an electric motor, as at present constructed, exerts at high speed a greater strain upon the roadbed than a steam locomotive. It had previously been claimed, with apparent reason, that, being a rotary motor, without the reciprocating motion of pistons and connecting rods, the electric locomotive would avoid the pounding of the track caused by the unbalanced parts and oscillating strain of the steam locomotive. It was therefore a surprise to find that above a certain speed, the strain exerted on the rails by the electric engines was even greater and more fatal. This is now explained by the fact that the center of gravity in the electric engine hangs much lower than in the steam machine, and, what is still more important, the whole weight of the steam boilers, cylinders, pilot, etc., is carried on springs, while in the electric engines used at the trials the motors and all the heavier working parts were hung directly upon the axles, thus adding a crushing weight to the blow delivered by the wheels upon the end of each rail. Attempts have since been made to devise a system of springs to avert or lighten this defect, but, so far as can be learned, with only very limited success.

The new steam locomotive, we are assured, will be specially constructed to meet this difficulty. It will rest on twelve wheels, viz, two pairs of drivers located at the middle of the machine, with a four-wheeled pivot truck in front and rear. Upon these three points of support the boiler and superstructure will be hung upon springs, carefully adjusted to take up as far as practicable the inevitable vibration and oscillation. The engine will be of the compound type, with three cylinders, and in order to secure the most perfect practical balance of working parts, two of these will be connected outside, as in an ordinary locomotive, while the third, or high-pressure cylinder, will be hung at the center and connected inside, working upon a mid-axle crank, set at 90° from the crank pin of the two outside cylinders, which are set opposite each other.

The boiler will have an interior heating surface of 200 square meters, more than double that of a standard German express locomotive as now constructed. Throughout the entire train, superfluous dead weight will be carefully avoided. Instead of carrying 10 tons of water, the new tender will be built to take only half that amount, but will be rigged to take up water en route, as has been successfully done on some American lines. As now planned, the new engine will have, theoretically, a coal consumption of 1.12 kilograms (2.352 pounds), per effective horsepower hour, as against 1.25 kilograms (2.625 pounds), which is the standard of economic efficiency in the best locomotives of the present German type. It will be interesting to compare this forecast of theoretical efficiency with the actual results which may be attained when the new engine is tested, which will probably be done during the course of next year.

FRANK H. MASON,
Consul-General.

BERLIN, *July 17, 1902.*

THE MANUFACTURE AND USE OF BRIQUETTES IN GERMANY.

Among the several branches of German industry which deserve the attention of Americans by reason of their economy, their recovery or utilization of some raw material which exists unused in our country, or because they involve the most intelligent application of scientific knowledge to technical processes, may be reckoned the manufacture of briquettes from brown coal, peat, and the dust and waste of coal mines. As has been stated in previous reports of this series,* briquettes form the principal domestic fuel of Berlin and other cities and districts in Germany; they are used for locomotive and other steam firing, and are employed for heating in various processes of manufacture. For all these uses, they have three tangible advantages: They are clean and convenient to handle; they light easily and quickly, and burn with a clear, intense flame; they make practically no smoke, and are, withal, the cheapest form of fuel for most purposes.

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*ADVANCE SHEETS NO. 1142; CONSULAR REPORTS NO. 254.

Like most other important German industries, the briquette manufacture is controlled by a syndicate which includes among its members thirty-one firms and companies, or more than nine-tenths of all the producers in this country, and regulates the output and prices for each year. From the official report of the syndicate for 1901, which has recently appeared, it is learned that the total output during last year was 1,566,385 tons, to which is to be added the product of makers outside the syndicate, consumed at works, small retail sales, etc., making a grand total of 1,643,416 tons.

The average selling price in large quantities was 13.33 marks ($3.16) per ton, against 12.27 marks ($2.92) for the year previous, so that, notwithstanding the general relaxation of industrial activity and the diminished pressure upon the coal supply, the ruling price was the highest that had been realized since 1891. Of the 1,566,385 tons sold by the syndicate last year, 749,208 tons were taken by the German railways, 124,380 tons were sold to retailers, 497,136 tons were sold to factories and works of various kinds, and 149,089 tons, or 9.8 per cent, were used by German merchant steamers and the navy or exported to the German colonies or neighboring European countries.

The following tabulated statement shows the production, the sales of the syndicate, and the mean price per ton for the past eleven years:

Year.	Production.	Sales of syndicate.	Price per ton.	
	Tons.	*Tons.*	*Marks.*	
1891	482,495	202,780	12.67	$3.02
1892	533,075	516,508	10.47	2.49
1893	694,025	645,144	9.08	2.16
1894	745,414	719,258	8.82	2.10
1895	796,363	780,185	9.07	2.16
1896	830,985	818,300	9.34	2.22
1897	943,732	934,221	9.99	2.38
1898	1,078,113	1,245,269	10.22	2.43
1899	1,530,816	1,485,130	10.66	2.34
1900	1,563,928	1,519,811	12.27	2.92
1901	1,566,385	1,560,230	13.33	3.17

The syndicate produces to a large extent briquettes made from coal screenings, which require a matrix or binder of some plastic, inflammable material, and for this purpose, 116,956 tons of mineral pitch were used, which cost on an average about $10.25 per ton, delivered.

It need hardly be said that the general use of briquettes for domestic fuel in a large, densely built city, as well as for generating steam in a number of electric generating plants and factories, must have a decided and beneficial influence in reducing the smoke, which in most American cities has become a persistent and oppressive nuisance. Berlin, although a busy manufacturing city, ranks as one of the cleanest and best kept in Europe. One of the first things usually noticed by American and English travelers visiting the German capital for the first time is the absence of that cloud of dusty smoke that overhangs so many towns and cities in our country. The reason for this lies in three facts: The preponderant use of coke and briquettes, which are practically smokeless; the skillful scientific construction of boiler furnaces and chimneys; and, finally, the high standard of skill that is taught and enforced among firemen who stoke furnaces with coal for steam and manufacturing purposes. It is not every strapping laborer who can shovel coal who is permitted to stoke a boiler furnace in this country. Before he can assume such a charge, he must be taught the theory and practice of economical, scientific firing, by which the coal is distributed in such manner and quantity over the grate surface as to secure the most perfect combustion of its volatile elements. The Silesian coal used here in most large steam plants and factories is rich in bitumen and would rank below many of the bituminous coals of the United States, and yet the long, dense, trailing clouds of smoke from mill and factory chimneys which are so familiar a sight in many American cities are rarely seen in this section of Germany, where the indiscriminate shoveling of raw bituminous coal into the steam and other furnaces is considered an ignorant and wasteful proceeding.

Coke making in retort ovens, by which every element is saved and bituminous coal converted into smokeless coke and gas, is another important factor in German fuel economy and abatement of the smoke nuisance. If American municipalities beyond the economic range of anthracite are ever emancipated from their present vassalage to the smoke incubus, it will be through the enforced use of one or more of three forms of prepared fuel, viz, coke and fuel gas made in closed ovens from bituminous coal, and briquettes made from lignite, peat, and other inferior materials by processes which have been invented, tested, and proven to be efficient by the older and more economical countries of Europe.

FRANK H. MASON,
Consul-General

BERLIN, *July 25, 1902.*

GERMAN ELECTRICAL MANUFACTURERS.

What is called in headlines by the German press "The catastrophe in the Schuckert Electrical Company" has during the past week recalled public attention sharply to the conditions under which some of the great electrical corporations of Germany were promoted, and the embarrassments which some of the methods employed have more or less inevitably entailed. The event alluded to was a meeting on the 26th instant of the stockholders of the Schuckert Electrical Company at Nuremberg, at which the managers announced that, through depreciation of plant and material, insolvent accounts, and necessary appropriations for a reserve fund to meet further depreciations, the company had suffered losses aggregating 15,500,000 marks, or something more than $3,500,000. As the Schuckert Company is one of the foremost corporations of its class in Europe, with an up-to-date plant and all the accompaniments of a large business, some surprise has been expressed that its affairs should make such a bad showing for its shareholders. The explanation leads back to the fact, now well known here, that the sudden rise of some of the German electrical companies into corporations of vast resources and activities was, in some cases at least, the result of skillful and artificial creation of markets for products, rather than the supply of an actual and legitimate demand. Concisely stated, some of these companies bought their orders for electrical installations and materials by financial operations that left them shareholders in many enterprises which have since proven less promptly lucrative than had been hoped, and have thus drawn more or less heavily upon the capital of the parent companies. To understand how all this came about, it should be remembered that German progress in electrical science was for a long time far in advance of popular appreciation of its advantages. The companies organized and equipped for the manufacture of lighting and power plants could not wait for the slow growth of public demand for such improvements, and they therefore undertook to finance and erect such installations themselves, confident that, once established and in use, the public would not fail to appreciate them and invest in their securities. This went very well for a time. It created a large and ready market for electrical machinery and materials at high prices, and supplied hesitating municipalities with electric tramways and lighting plants which their citizens greatly enjoyed, but which were built and for a time managed by the electrical manufacturing companies at their own expense. Inevitably, this process of consuming their own capital necessitated heavy loans and frequent increases in the stock of such corporations, together with a steady expansion of their manufacturing capacity. Some of the companies, especially the Schuckert corporation, made enormous investments in electric installations for the manufacture of calcium carbide, putting in the machinery at their own prices but receiving for it little or nothing except stock in the carbide plants. Thus the supply of acetylene material was soon far beyond all legitimate requirements, prices collapsed, and the carbide industry suffered a serious and permanent reverse.

Another heavy blow for some of the German electrical manufacturing companies has been the failure of the storage-battery traction system for tramways, which is now conceded to be practically hopeless. When electric traction was introduced into this country, municipal governments were timid and hesitating. They objected to the overhead conductor because it was considered unsightly and dangerous, and in order to obtain any franchise at all the tramway companies and the electrical manufacturers who were behind them had to agree to furnish cars that would dispense with a visible trolley. This meant either the underground-conduit system—which is so expensive to construct as to be justified only by an enormous traffic—or a reliance upon storage batteries, and the companies generally had recourse to the latter. The extent to which this has been done may be inferred from the fact that one company in Hanover has at present 274 accumulator cars in service. There, as at Halle, Hagen, and many other places, they have been found so heavy, costly, and subject to explosions as to be unremunerative. At Berlin, where many hundreds of them have been in service, all are to be abandoned and recourse had to underground conductors for centrally located streets and overhead wires for the less crowded and suburban sections.

The net result of all these conditions was that some of the electrical manufacturing companies of Germany which had gone on organizing and supplying power, lighting, carbide, and other plants, not only at home, but in Russia, Scandinavia, Austria-Hungary, and other European countries, were caught with all sail spread by the turning tide and adverse gale that set in during the summer of 1900. In the stormy weather that ensued, most industrial stocks declined sharply, the investing public became alarmed and timid, the failures of the Leipziger and other banks followed a few months later, and led on to the situation of which the meeting of last week at Nuremberg has been the ultimate result.

The encouraging features of the present condition are the fact that the credit of several of the oldest and strongest of the electrical companies remains unshaken, the general feeling that the bottom has been reached, that the obligations entailed by a system of forced development have been mostly liquidated, and that with the good cereal crops that will be harvested this year, peace throughout the world, and the hoped-for renewal of the commercial treaties which are to lapse next year, the foundation will be laid for a renewed and enduring prosperity.

FRANK H. MASON,
Consul-General.

BERLIN, *August 1, 1902.*

GERMAN METAL EXPORTS AND EXPORT BOUNTIES.

The midsummer outlook for the German metal and mining industries is not so reassuring as had been confidently hoped for since the beginning of the year. The reports of several chambers of commerce, notably those from cities in busy industrial centers like Bochum, in Westphalia, have recently appeared, and in summing up the results of the fiscal year are decidedly pessimistic on one point, namely, the persistence of manufacturers in building and opening new and costly plants which will still further increase their productive capacity, at a time when the home market is overstocked with most industrial products and when prudence would dictate that the output should be judiciously reduced.

It is true that the exports of iron and steel are enormous and steadily increasing. A comparison of the exports of iron and steel and manufactures thereof during the first six months of the past five years shows the following striking development, the statistics being given in metric tons of 2,204 pounds:

Month.	1902.	1901.	1900.	1899.	1898.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
January	282,807	147,261	116,100	126,401	120,931
February	208,604	136,720	120,755	126,193	119,298
March	238,972	173,860	127,955	135,002	146,343
April	237,827	159,953	115,969	125,572	146,527
May	268,092	187,233	134,962	126,887	143,520
June	267,440	189,377	128,483	129,376	149,909
Total	1,503,742	994,404	744,224	769,431	826,528

There is thus shown an increase in bulk of more than half a million tons, or 51.2 per cent, over the exports of the first half of 1901, which were at that time the largest on record. As compared with those of 1900, the exports of the past six months have more than doubled. It is only when the fact is noticed that the increase in the aggregate values of these exports is only from 240,100,000 marks to 294,700,000 marks ($57,143,800 to $70,852,600), or 22.7 per cent, that the vital fact of the situation becomes apparent, which is that a large part of this vast bulk of exports has been marketed abroad rather on the basis of a clearing-out sale, in which the goods were offered at whatever sacrifice might be necessary to secure their sale. Since, as the statistics show, the percentage of increased total values of metal exports is less than half their increase in quantity, the inference is obvious that there has been at the same time a general and substantial reduction in price. This conclusion is further confirmed by other facts of common knowledge.

A BOUNTY SYNDICATE FOR THE EXPORT TRADE.

Among these may be cited the action of a meeting which was called at Cologne some weeks ago, at which were assembled representatives of the coal and iron industries of Germany. The avowed purpose of the conference was to consider the general unsatisfactory condition of the home market, the persistent increase in productive capacity, and the low prices obtainable for exports. After a full discussion, it was decided that the situation demanded and justified a return to the system of export bounties which had been used with such effect in the early years of German industrial expansion. Thereupon Mr. Kirdorf, president of the Westphalian Coal Syndicate, proposed a union between the coal and iron interests for the purpose of providing export bounties among all the leading syndicates in the metal and mining industries. This was agreed to, and the combination was formed to include the Coal Syndicate, the Coke Syndicate, the Westphalian Pig Iron Syndicate, the Siegen and the Lorraine-Luxemburg Pig Iron syndicates, the "Halbzeug" (semi-finished product) Syndicate, the Wire Drawers' Association, and the syndicates of sheet metal, girders, and structural iron, besides all analogous bodies in process of formation at the time of the meeting.

This vast and powerful export association is based upon an agreement that its members shall contribute to pay to such members as export their products a bonus equal to the difference between the current price of the merchandise in the German markets and the price actually obtained for it abroad. Thereupon a central office for verification (Oberrechnungsstelle für die Ausfuhr) was organized and established at Cologne under the management of Messrs. Schrödter & Ottmann, who will be assisted by a third member who represents specially the coal and coke syndicates. These officers are further under control of an executive council made up of delegates from the principal syndicates, whose special functions will be to decide disputed questions which may arise in the allotment of bonuses, and propose plans as to their amount and duration. The bonuses are to be paid quarterly, and the system is dated back to the commencement of the present year, so as to cover the transactions of the past six months. They will be based on the sales made and actually exported by each member during the pending quarter, including contracts for delivery abroad during the next ensuing quarter.

The bounties to be thus paid on exported metals are calculated upon the amounts of raw materials consumed in their production, and the ingenious schedule by which these are to be apportioned is as follows, in which the amounts of coal, coke, pig iron, and blooms is given as allowed for the production of a metric ton (2,204 pounds) of each exported finished or partly finished product·

Consumption of coal.

Per ton of—	Pounds.
Bessemer ingots	330
Siemens-Martin ingots	770
Blooms and billets	1,200
Rails, crossings, fish plates	1,320
Rolled rods, from purchased billets	1,100
Drawn wire and wire nails	1,760
Bar iron and small sections obtained from purchased billets	770
Sheets and plates	1,540

Consumption of coke.

Pig iron	2,420
Raw ingots	2,860
Blooms, billets, rails, large sections	2,970
Drawn wire	3,300

Consumption of pig iron.

Raw ingots	2,530
Blooms, billets, rails	2,640
Bar iron	2,750

Consumption of blooms, etc.

Rods	2,330
Bar iron, sheets	2,420

Consumption of rods.

Wire nails	2,420

It is evident that with a combination like this at their backs, the iron and steel makers of Germany will continue to be stubborn and enterprising competitors in the markets not only of Europe, but of South and Central America, Africa, and the East.

FRANK H. MASON,
Consul-General.

BERLIN, *August 1, 1900.*

GERMAN CONSUMPTION OF FRESH AND PRESERVED FRUITS.

American visitors to Germany have been until quite recently accustomed to note with some surprise how small a part fresh fruits and certain vegetable luxuries like celery, artichokes, melons, and eggplant have contributed to the daily food of a great majority of even the wealthier class of people. Even at the principal hotels fresh fruits have been, and indeed are still, if not a rare luxury, at least a very costly one. The reasons usually ascribed for this general fact are that the climate and soil of Germany are not adapted, like that of France and Italy, to the culture of many kinds of fruits. Luxuries among the well-to-do generally take the form of meats and wines, and partly as cause, partly as a result of the general indifference to fruits, farmers and horticulturists have until recent years paid small attention to budding, grafting, and improving the quality of domestic varieties. The common blue plum, pears, and cherries grow naturally and well, but apples, peaches, melons, and apricots of native origin are generally of second-rate quality and relatively dear in price.

But, beginning with the period of Germany's rapid industrial development, the busy years from 1895 to 1900, when the earnings of the working classes were not only constant but steadily augmented, there was a general and marked improvement in the condition of the people. Their houses, furniture, clothing, and food were improved to a degree for which the past afforded no precedent, and as part of this general advance there was a notable increase in the consumption—and therefore the importation—of fresh and preserved fruits. The taste for them once established, and educated by the choice and delicious imported varieties which have set new standards in the German market, has proved steady and persistent, and notwithstanding the temporary decline in industrial prosperity and consequently diminished earnings, the fruit supply and the demand for it continue to increase. In years of large apple crops in the United States, our country has since 1896 contributed liberally to the supply of winter apples, but aside from this Italy, France, and the Austrian Tyrol are the chief sources of fresh-fruit imports into Germany. The growth of the traffic will be illustrated by some statistics which have just been published by the Italian Government, and which show that during the months of July, August, and September, 1901, Italy shipped to this country 2,400 carloads of fresh fruits and vegetables, of which 741 carloads came to Berlin, 758 went to Munich, 134 to Leipzig, 110 to Hamburg, 87 to Dresden, 64 to Frankfort, and the remainder were distributed throughout the other cities and towns in proportion to their wealth and population.

During the entire year ending April 1, 1901, Berlin received from Italy alone 50 carloads of cherries, 357 carloads of table grapes, 245 carloads of small summer fruits, 48 carloads of winter apples, and 100 carloads of vegetables. A comparison of these figures with those of the year following—April 1, 1901, to March 30, 1902—shows the surprising fact that in one year, despite business depression and generally diminished personal incomes, the import of Italian fresh fruits to Berlin alone rose to 100 carloads of cherries, 600 carloads of grapes, 375 carloads of berries and small summer fruits, 150 carloads of winter apples, and 120 carloads of garden vegetables. The fruit stores of Berlin have doubled in number and greatly increased their capacity and business during the past two years. Prices of fresh fruits, both at stores and on the markets, have declined as the supply has increased. Among the new institutions of the city are several so-called "reform cafés," in which fresh and canned fruits, jellies, etc., are served "in the American way," as a tempting substitute for the drinks and forms of food ordinarily provided at such establishments. Until within recent years, fresh fruits, when eaten at most German tables, were served as dessert—rarely or never at breakfast, the first meal of the day. Now many leading physicians prescribe fruits at breakfast, and the spread of this so-called American practice is one of the main reasons for the general and largely increased importation and consumption which have become so noticeable.

Along with this has come a vastly increased use of canned, dried, and otherwise preserved fruits, of which the imported supply comes in steadily increasing volume from the United States. Within the past year these goods have been put on sale in immense quantities by the two leading department stores of Berlin, which, by means of special direct importations, have been able to offer canned peaches, apricots, pears, and cherries, and dried prunes, evaporated apples, etc., from the Pacific and other American States at prices so far below those charged for the same fruits by retail grocers as to open these imported luxuries to a large class of working people with small incomes to whom they were previously a forbidden—because a too costly—luxury.

There is hardly any reasonable limit to which the dried and preserved fruit export trade to Germany may not be in time developed, provided the business is conducted skillfully, with intelligent enterprise, and in good faith. The one exclusively American preserved-fruit store in Berlin has trebled its business during the past year and is now contemplating removal to larger and more costly quarters in the principal retail thoroughfare. Grocers and provision dealers in all quarters of the city display boxes of California dried pears, apricots, prunes, apples, and peaches in their show windows as their most attractive advertisement. Most of these goods are fairly well graded and satisfactory, but there is more or less complaint about evaporated apples, which in many cases are not sufficiently dried, and, being left too moist, become mouldy and depreciate rapidly in the humid climate of Germany. The evaporated-apple industry should by this time have reached a stage where account may be taken of the market for which the product is intended and special treatment provided as climate and circumstances may require. So, too, in packing, the inner contents of a box of dried pears or apricots should be reasonably within the same grade of quality as the selected pieces which are so temptingly ranged along the top and bottom, otherwise the German retailer will feel that he has been cheated by a trick in which the best of a purchased commodity has been put on the outside.

And if so trite and threadbare a warning may be once more repeated, whatever fresh apples are exported to Germany this fall should be specially selected and packed for the purpose, as they are in France, Italy, and the Tyrol. It is not necessary that American apples, the superior tenderness and flavor of which are now well known in this country, should be sold here as cheaply as they have been offered in former years, but it is necessary that they should be picked, wrapped, and packed in ventilated barrels far more carefully than hitherto. Fine apples are a luxury for which European consumers have been long accustomed to pay what seem to us high prices. The best American fruit is up to the highest standard in all respects except the methods by which it is put up and handled, and these have been in many cases so rude and careless that losses have occurred on some shipments of apples, which have made importers somewhat afraid of them. On arrival in this country, they have to compete in the markets and fruit stores with French, Italian, and Tyrolese apples, which have been carefully picked by hand, wiped with dry cloths, each apple wrapped in soft, porous paper, and snugly laid layerwise in casks lined with paper and having openings cut in their ends and heads to secure adequate ventilation. Such packing will increase the ordinary cost of the fruit, but need be no obstacle. The question is not so much one of price as quality and condition, and European methods of packing are necessary in order to give the American apple a fair chance in the German market.

FRANK H. MASON,
Consul-General.

BERLIN, *August 7, 1902.*

ITALIAN FRUITS IN GERMANY.

During the four months from July to October of last year, 2,400 carloads of fruits and vegetables were sent from Italy, via Ala and Kufstein, to Germany.

The destinations were:

	Carloads.
Munich	758
Berlin	741
Leipzig	134
Hamburg	110
Dresden	87
Chemnitz	76
Stuttgart	68
Frankfort-on-the-Main	64
Plauen	52
Ulm	44
Cologne	43
Nuremberg	41
Breslau	6
Elberfeld	2

The city of Berlin, during the twelve months from April 1, 1899, to April 1, 1900, received from Italy 50 carloads of cherries, 357 of table grapes, 245 of summer fruits, 48 of winter apples, and 100 of garden truck. In 1901, the business practically doubled.

It should be noted that the importation of peaches in 1900 amounted to only about 10 to 15 carloads, while in 1901 it was 50 carloads. It is astonishing that no enterprising American concern has tried to start a steady business in the German fruit markets. The time needed for transportation from the United States, owing to the slowness of the freight service here, would be less than from Italy. American methods, however, must be adopted at the port of entry into the German Empire or the fruits will spoil. The shippers, to be successful, must have their own men to handle the fruits on arrival in Germany, and to ship to local agents in the interior.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *July 24, 1902.*

ELECTRICITY FOR CULTIVATION OF PLANTS.

A Frankfort journal of recent date describes experiments made by Mr. J. Fuchs, a wine producer of Elba, in the use of electricity in grape culture.

He planted, some years ago, four fields with native grapevines, in the midst of a district infested with phylloxera, and treated two of these fields with "air electricity." The difference in the development of the grapes of the fields was apparent; those treated with electricity yielded better results, both in quantity and quality, and were not infected with phylloxera, while the other fields were.

Mr. Fuchs, says the journal, has demonstrated that electricity increases the fertility of the soil. It is not sufficient to simply conduct air electricity to the earth, but there should be a direct metallic connection of the electric conduit with the main stem of the plant. On a field of about 2½ acres, five masts are erected, the tops of which are supplied with an arrangement for accumulating atmospheric electricity. These accumulators are connected with each other by wires. Wires are laid in the soil about 1½ feet deep, forming an evenly distributed metallic net. Every accumulator is connected with this metallic net by a wire running along the mast. Short wires connect with the plants, the free ends being stuck into the stem or into the main root thereof.

It is stated that if this method fulfills expectations, it will be a very important invention.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *July 7, 1902.*

HORSE BREEDING IN GERMANY AND FRANCE.

It is only during the last few years that special attention has been given to horse breeding in Germany. Careful inquiries into the subject show that the system so far followed does not fill the requirements of the army or of the public in general. While in England, France, Belgium, and Denmark horse breeding pays farmers—especially small ones—better than any other branch of industry, this is not true in Germany, where many complaints are heard with regard to Government rules, which are said to be adverse to a favorable development of horse breeding. In consequence, the importation of foreign-bred animals is continually increasing. In 1900, France exported 3,000 horses more than she imported, but Germany had to import 90,000 more than she exported. In view of these facts, the German Foreign Office sent an expert to northern France to investigate French horse breeding. His printed report says, in part:

> After the Franco-German war (1870–71), French horse breeding was nearly ruined, and in 1874 the French Chamber of Deputies had to grant money to gradually reestablish it, and the success now attained proves the wisdom of that act. In France, 18,000,000 francs ($3,474,000)—of which the State alone contributes 2,355,570 francs ($454,625)—are spent every year in the improvement of horse breeding, while in Germany the Government spends only a little more than 300,000 marks ($71,400) and gives a number of prizes for races.
>
> Among the causes which have contributed to the advancement of horse breeding

in France is the fact that the whole management is under the charge of a specially appointed staff; in Germany, it rests in the hands of one man. At the head of the French staff (under the supervision of the Minister of Agriculture) is the director-general, with his seat in Paris. Under him are six inspectors-general and other necessary employees, who purchase and care for the stallions for the State.

Another beneficial institution is the stud school at Le Pin, where the training of employees is finished. The "breaking-in schools" (écoles de dressage) are of great help in the rearing of half-bred horses. The better classes of coachmen and horse grooms often come from these schools. The skillful way in which the Paris hackney coachmen handle their horses and make their way through the crowded thoroughfares—due less to use of the whip than to attention—should be credited to a great extent to the beneficial influences exercised by the "écoles de dressage."

The forming of horse-breeders' unions, a rational selection of stud-horses, and some method of helping private persons or associations to keep the necessary stud animals is advised. France had, in 1900, 3,087 stallions belonging to the State and 7,480 to private persons, while in the Kingdom of Prussia only 2,924 stallions belonged to the State and 1,599 to private parties; and it must be remembered that Prussia is doing more than any other German state to improve her horse-breeding establishments.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *July 24, 1902.*

ELECTRIC POWER FOR AGRICULTURE IN GERMANY.

In a paper read before a recent conference of German electrical engineers, Dr. Haas, of Hanover, referred to the electric power supplied to agriculture in that neighborhood. The greatest demand for current was for the operation of thrashing machinery, although energy was also used for driving pumps, hay presses, straw-cutters, etc. Of the total horsepower installed, 77 per cent represented purely agricultural operations and 8 per cent factories, although the former only yielded 53 per cent of the receipts. On an average, the annual revenue per horsepower installed amounted to $6.73 (as compared with from $17.03 to $36.50 in towns) at a price of 57 cents per kilowatt hour, and the average period of use did not reach 150 hours, as against 500 hours in towns. There is little demand for light in the villages, as the people retire early. The author concludes, from the experience in the Hanover district, that satisfactory results are possible in agricultural operations only where cables already exist for the transmission of power or for electric tramways, which can readily satisfy the small and occasional demand for agricultural purposes.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *July 30, 1902.*

NEW NATIONAL SCHOOL IN GERMANY.

On the 10th of May, 1902, some of the most prominent citizens of Baden met in conference in Karlsruhe to discuss the founding of a German national school. At the close of the session, an appeal was issued to the German people, the contents of which may be summarized as follows:

> The efforts to infuse into our national system of education all the necessities of the age have thus far been applied almost exclusively toward strengthening the internal needs of our race, without taking into consideration the wants of our people located in foreign countries. Other nations, which have vast interests in every part of the world, have long since established schools which prepare young men to take up lucrative and responsible positions in their colonies. This is especially true of England, where education may be termed one-sided in favor of the colonial service.
>
> As time passes, two things become more and more prominent as necessary to the future of the German Empire:
>
> I. Our ability to compete in the world's markets.
>
> II. The preservation of the German element in foreign countries, and the fostering of mutual ties with the mother country.
>
> Upon these two conditions may be said to rest the commercial future of the German Empire. This is especially the case when we consider that the German colonies will never be capable of receiving, to any great extent, the thousands of Germans who emigrate every year. There are to-day some 13,000,000 German-speaking people in foreign countries, who for the most part have renounced allegiance to the land of their birth and enrolled themselves under other flags. To prevent a continuance of this state of affairs will be one of the primary duties of the national school. As a means to accomplish this, we announce the following programme for the young men placed in this school:
>
> (1) A thorough course in economics.
>
> (2) The infusion of German character and civilization, so that the same will remain uninfluenced by the habits and customs existing in other countries in which these young men may locate.
>
> (3) A practical and theoretical course in agriculture, horticulture, and different trades.
>
> (4) To establish boys between the ages of 9 and 15 years in good families for the purpose of better instruction and discipline, where they may at the same time attend the public schools.
>
> (5) Three years' preparation for the national school, between the ages of 15 and 18, in commercial, technical, and agricultural subjects.

From the latest newspaper reports, this school has been established in Wertheim-on-the-Main. It will be formally opened this fall.

ERNEST L. HARRIS,
Consular Agent.

EIBENSTOCK, *July 19, 1902.*

THE GERMAN CONSULAR SYSTEM.

The development of the German consular system during the last twenty-five years testifies to the industrial and commercial expansion of the German Empire. In 1872, the service comprised some 556 consulates, while in 1897 (last statistics available) the number had grown to 789. Two general classes may be distinguished in the German service; the consuls by profession (Berufskonsul) and the elective consuls (Wahlkonsul). The former hold office under civil-service rules, and are admitted upon examination or other special proof of fitness, such as service in chambers of commerce. Promotions are made on the strength of the work done, and regular salaries are paid. The elective consuls are chosen by the business men of the foreign city where they are to act, and receive no fixed salary, their position being honorary in nature. Consuls by profession are, of course, sent to the most important commercial centers.

In Europe, German consulates were increased by the number of 49 during the last twenty-five years; in North and South America, by 43; in Asia, Africa, and Australia, by 5; and in the various colonies and dependencies of the world, by 23. The most rapid increase in the number of consulates is found in the United States. The tendency at present is to enlarge the ranks of professional consuls.

J. F. MONAGHAN,
Consul.

CHEMNITZ, *July 24, 1902.*

GERMAN EXPORT OF LOCOMOTIVES AND TRACTION ENGINES.

German manufacturers of machinery have recently received orders for 100 locomotives, representing a value of 6,000,000 marks ($1,428,000), which will go to Siam, Italy, India, and Denmark.

While the German export of machinery as a whole has decidedly decreased during the past year, it is worthy of note that the export of locomotives and traction engines has advanced considerably, as shown by the following figures:

	Marks.	
1899	13,300,000=	$2,689,400
1900	15,700,000=	3,736,600
1901	22,100,000=	5,259,000

In the figures for 1899 and 1900, traction and passenger cars and motor wagons to the value of $700,000 to $800,000 are included.

As to weight, there were 67,609 tons of locomotives and traction engines exported in 1900 and 100,762 tons in 1901.

JOSEPH J. LANGER,
Consul.

SOLINGEN, *August 2, 1902.*

PAPER INDUSTRY OF GERMANY IN 1901.

Owing to the favorable condition of the paper industry, contracts for wood pulp for 1901 were readily closed; but the long drought caused a lack of water power, which in turn decreased the production, and Canadian and Scandinavian competition, as well as the general business depression, caused a decrease of sales and demand for lower prices toward the end of the year.

The price of pine wood, which had steadily increased, seems to be at a standstill, as consumers have combined to make purchases direct, instead of through middlemen.

Wood from Finland is able to compete on account of its quality, when the transportation charges are not too high.

The printing-paper factories have formed a combination to regulate sales, but their efforts are confined chiefly to the export trade. The production of these works has decreased some 15 to 20 per cent.

The home industry in wood pulp desires that the duty on dry wood pulp, which now pays 1 mark (23.8 cents) per 100 kilograms (220.46 pounds), be raised to 3 marks (71.4 cents) per 100 kilograms, and that moist pulp pay 2 marks (47.6 cents) per 100 kilograms.

The following table shows the trade in packing paper for the years 1900 and 1901:

Description.	Import.		Export.	
	1901.	1900.	1901.	1900.
	Cwts.	*Cwts.*	*Cwts.*	*Cwts.*
Ordinary	5,120	4,969	176,123	173,132
Smooth	32,591	33,037	255,392	285,278

JOSEPH J. LANGER,
Consul.

SOLINGEN, *July 15, 1902.*

NEW FIRE PUMP IN ROUEN.

Supplementing my report on extinguishing fire in Rouen,* I have to say that there appeared yesterday in one of the Rouen dailies the following:

> An experiment was made last evening, at the Hotel de Ville, with a new fire pump invented by Mr. Robert Lefebre, captain of the Rouen fire company. This pump is so small that only a very light two-wheeled cart with one horse is necessary to transport it. The dynamo is so constructed as to be run by a current from the street car or electric-light wires, and is brought into contact with them by means of a hooked pole or rod. The pump furnishes a pressure capable of throwing a jet of water, with a force equal to that of a steam pump, to the height of over 100 feet. It also has the advantage of being placed quickly in action wherever there is an electric current. For this operation, it took only three minutes in yesterday's experiment, whereas to get a steam pump up to the same pressure takes fourteen minutes.

This machine was constructed by the firm of E. Feugère, 76 rue Elbeuf, Rouen.

THORNWELL HAYNES,
Consul.

ROUEN, *July 9, 1902.*

HARVEST OF FRENCH WINE AND CIDER.

WINE.

A few days ago, the French Minister of Agriculture published the estimate of this year's wine harvest. Indications in fourteen of the eighty-seven Departments of France point to a good harvest; in forty, fairly good; in twelve, passable; in eight, ordinary; in the other thirteen Departments, the vine is not cultivated.

L'Agriculture Nouvelle, in commenting upon the report, says:

> If the figures are compared with those of last year's harvest, which gave 58,000,000 hectoliters (1,532,186,000 gallons), it is easy to see that the production of the present harvest should, arithmetically, be not far from 45,000,000 hectoliters (1,188,765,000 gallons), if the temperature continues normal. If the stock on hand at present is counted, this quantity will be sufficient to supply the needs of our own consumption until next year's harvest.

CIDER.

It is generally believed that the production of cider will hardly be more than half of a good harvest. This is especially disappointing, in view of the fine spring, but the intemperate weather during June destroyed all hope. In this Department (Normandy), which is considered the home of the apple, and in Maine-et-Loire and Bretagne, the yield will be very poor, apples dear, and the production of cider small.

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*ADVANCE SHEETS No. 1122 (August 24, 1901); CONSULAR REPORTS No. 253 (October, 1901).

The harvest of pears, from which cider is also made, will also be about half of the average.

THORNWELL HAYNES,
Consul.

ROUEN, *July 28, 1902.*

ANTWERP IVORY MARKET.

The third quarterly ivory sale closed July 30, 1902, the ivory offered and sold being:

	Pounds.
Kongo:	
Hard	100, 729. 2
Soft	7, 405. 2
Angola	34, 786. 4
Kamerun	8, 850
Ambriz	2, 873. 2
Gaboon	422. 4
Gold Coast and Senegal	1, 104. 4
Benguela and Abyssinia	314. 6
Hippopotamus tusks	88. 6
Total	156, 574

Previous sales for corresponding periods have shown:

	Pounds.
1901	158, 855. 4
1900	170, 937. 8
1899	160, 397. 6
1898	78, 229. 8

The sale was animated and the advance in price for tusks of all weight was from 20 to 40 cents. The market for bangles was very firm and the fine lots were sold at from 10 to 20 cents above former prices. Tusks for billiard balls were firm and sold at an increase of 20 cents, save soft tusks, for which the increase was 60 cents. The market for scrivailles was rather irregular, generally falling from 10 to 20 cents.

The stock on hand amounts to 298,597 pounds, against—

	Pounds.
1901	279, 400
1900	209, 000
1899	224, 400
1898	174, 264

The next quarterly auction sale will take place November 4, 1902.

GEO. F. LINCOLN,
Consul-General.

ANTWERP, *August 1, 1902.*

CONFLICT IN THE SWISS CHEESE MARKET.

There is a conflict between the producers and the dealers in Swiss cheese in Switzerland, causing a suspension of the usual business of the season, through which our own dealers in this article might profit. The conflict is caused by the dealers insisting that the producers should comply with the old-fashioned custom of giving as a bonus an additional 6 per cent of the purchased weight.

The same difficulty occurred last year, and American buyers purchased direct from the producers, but the latter soon gave in and their entire output was immediately bought by the Swiss dealers.

This year, the Dealers' Association has agreed to impose a penalty of 1,000 francs ($193) on any member of the association who buys cheese without the bonus of 6 per cent, and in retaliation 500 cheese makers have entered into an agreement not to give more than the weight actually bought and paid for, in default of which they bind themselves to the payment of a fine of from 1,000 to 3,000 francs ($193 to $579).

The situation offers an excellent opportunity for foreign dealers to buy the finest and most valuable Swiss product at an exceptionally low price. Upon reliable authority, I am informed that French dealers have already availed themselves of the opening.

HENRY H. MORGAN,
LUCERNE, *August 6, 1902* *Consul.*

NEW RAILWAY BETWEEN MADRID AND BILBAO.

The Department has received from Consul-General J. G. Lay, of Barcelona, and from Consul R. M. Bartleman, of Valencia, descriptions of the new railway between Madrid and Bilbao. Mr. Lay says:

A company has been formed under the name of the Compania Ferroviaria Vasco-Castellana, for the purpose of making a direct double-track railway between Madrid and the important northern seaport of Bilbao. Shares in the new enterprise are now being offered to the public.

The company seems to be a development of the Sierra Company, Limited, of London, England, which already holds the concession for 42 miles of railway, connecting its important mines in the provinces of Burgos and Logrono with the sea. This short railroad was primarily intended only for the transport of the company's minerals, but, on the urgent representations of the neighboring towns and of influential commercial bodies, it has been decided to convert it into a public railway and to extend it to Madrid.

The provincial council of Burgos has offered a subvention of 3,000,000 pesetas ($462,000) in cash, and the corporation of that city has voted 475,000 pesetas ($73,000) for the station buildings. Other provincial and municipal bodies have also promised pecuniary assistance and the grant of land, as it is recognized on all hands that the opening of the new line can not fail to greatly increase the prosperity of the entire district.

The saving in distance between Madrid and Bilbao will be 85 miles, and Bilbao will thus be made the nearest maritime port to the capital.

The line is to be finished and in working order within five years from its commencement.

The company will be legally domiciled at Bilbao, but the London address will be: The Sierra Company, Limited, 75 Lombard street, London, E. C.

Much material of all kinds, besides rolling stock, will be required, and firms in the United States desirous of making offers should lose no time in doing so.

Consul Bartleman adds:

Preliminary work has already begun on the road; by far the most important opened in Spain in recent years, as it will place Madrid in direct communication with Bilbao, the chief seaport, mining, and industrial center in the north of Spain. The line will mark a distinct advance and a complete departure from Spanish railway traditions, not only in being a double track, but in the employment of the best materials, rolling stock, and appointments that modern industrial science can supply. The distance (261 miles) will be covered in about six hours. I inclose a map of the road.*

SPANISH FRUIT EXPORTS.

Consul R. M. Bartleman sends from Valencia, July 7, 1902, translation of a press article in regard to the exportation of fruit from Spain, as follows:

The following statistics show the value of fruit exported from Spain during the first five months of 1900, 1901, and 1902:

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* Filed in the Bureau of Foreign Commerce, where it may be examined by parties interested.

Article.	First five months of—					
	1900.		1901.		1902.	
	*Pesetas.**		*Pesetas.**		*Pesetas.**	
Almonds	158,773	$24,451	184,003	$28,335	493,127	$75,942
Shelled	1,601,287	246,598	1,751,446	269,723	2,796,748	430,799
Filberts	864,391	133,116	697,892	107,475	1,613,904	248,541
Figs	120,328	18,531	61,544	9,478	200,879	30,935
Raisins	986,459	151,915	1,024,552	157,781	1,513,032	233,007
Oranges	26,320,846	4,053,410	25,857,815	3,982,104	31,962,595	5,384,239

* The value of the peseta is averaged at 15.4 cents, for purposes of comparison.

We do not mention other descriptions of fruit, because of their relative unimportance, but we are of the opinion that such a volume of trade, representing as it does almost a sixth of our total exports, merits more careful study and consideration, so as to increase the facilities for its development and remove the obstacles that hamper its progress by cheapening and improving the means of transportation.

ROYAL DANISH PORCELAIN.

Consul J. C. Freeman, of Copenhagen, under date of August 2, 1902, sends an extract from the Danish Export Review regarding the progress and present condition of the manufacture of Royal Danish porcelain, which reads:

The Royal Porcelain Manufactory was established in 1779, at which time the three blue waved lines were adopted as the trade-mark; later, a crown and the word "Denmark" or "Royal Copenhagen" were added in green. Until the close of the eighteenth century, the manufactory chiefly imitated the works of Meissen, Berlin, and Fürstenberg. From the beginning, it produced the blue-mussel painted china, so called from the shell which serves as a handle to the covers. The pattern is painted by hand, whereby it obtains the individual stamp, with cobalt color; it is afterwards glazed and finally burnt. The decoration, which is covered by the glaze, is absolutely imperishable. This china now includes two qualities of finer make, namely, "lace edge" and "half-lace edge."

In 1883, the manufactory was established in new premises and steps were taken to gain new markets. The same underglazing technic which was applied in the first manufacture of the mussel painted china was continued, but in addition to the blue color, green and tints of red were included; later on, other less important colors were added. In 1898, the manufactory was enlarged, enabling it to produce half as much again. It has been represented at all of the various expositions, and was awarded the grand prix at Paris in 1900 and also placed as number two of the competitors. At the Paris exhibition, besides having a wide selection of patterns of porcelain with liquid glaze, the manufactory had also an exhibit of modeled animals. The manufactory has established branch depots in Paris, London, and New York.

THE SPITZBERGEN COAL DEPOSITS.*

Efforts are being made to use the coal deposits at Spitzbergen. An analysis of the coals from Advent Bay shows that they have the qualities of gas coal. They burn with a high flame and are extremely combustible. The heating power is calculated at 7,311 caloriferes, and as the sample was taken from the outer frozen layers, it seems likely that the heating power may be still greater.

It should be pointed out that, unlike the development of coal deposits in civilized countries, no great capital is required to start the work at Spitzbergen. There is no question of costly ground or difficult foundation in the way of shafts, and as the surface is not inhabited this requires no consideration.

Transport to ships will be inexpensive, the situation favoring a rope railway on which any quantity could be transported.

Mr. Getz, a mining engineer, and Mr. Gronvold, a mechanical engineer, both of whom have been superintending the works, give it as their opinion that the coals will cost 8 to 9 kroner ($2.14 to $2.41) per ton.

With an operative force of 60 workmen, 25,000 tons could be taken out annually. Transportation could take place only during summer, but the works could be kept going all the year round.

Every effort will be made on my part to introduce American mining machinery, and several catalogues from our manufacturers have already been forwarded to Drontheim.

VICTOR E. NELSON,
Consul.

BERGEN, *August 2, 1902.*

METRIC SYSTEM IN GREAT BRITAIN: BILLS OF LADING.

At a recent meeting of the Wolverhampton Chamber of Commerce, a letter was read from Mr. Joseph Chamberlain, the Colonial Secretary, stating that as no colonial government had proposed to introduce the metric system for discussion at the conference of colonial premiers, he could not undertake to bring the matter before the conference, though he recognized it as important. In an editorial comment upon this disappointment to advocates of the metric system, the Birmingham Daily Mail says:

> Sooner or later, of course—and more probably later—this important alteration in our weights and measures will come about and the country brought into line with the majority of the progressive nations. But at present public education in the

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*See ADVANCE SHEETS No. 1337 (May 9, 1902); CONSULAR REPORTS No. 262 (July 1, 1902).

advantages of the suggested system is a plant of slow growth, and, apart from scientific circles, the movement makes tardy progress. If the change were less revolutionary it would suit our conservative temperament better.

At the same meeting of the Wolverhampton Chamber of Commerce there was discussion about the new consignment notes issued by British railway companies. These companies, to the alarm of business men, have sent out circulars to each trade giving notice that in future they will decline to carry goods at owner's-risk rates unless the consignor signs an agreement exonerating the railway companies from all liability on account of damage to goods, except where it can be clearly proven to result from the willful act or neglect of the companies' servants. There have always been two scales of freight charges: the low-rate owner's risk and company's risk—the latter a high rate; and while the railway companies claim that they are merely putting in more formal shape what has always been a railway practice, shippers claim that the railway companies have for years paid damages even when goods were shipped at owner's-risk rates, and they believe that the companies have planned hereafter to refuse to recognize all liability for damages of goods where neglect of the companies' servants, or willful act, has not been so flagrant that the shipper can risk the costs of suit.

The secretary was requested to forward a circular to each member of the Wolverhampton chamber asking him not to sign the agreement, and adding that it was probable that united action would be taken to test the question. The Wolverhampton chamber declared itself in favor of an international conference to consider the laws relating to bills of lading, and has passed a resolution urging His Majesty's Government to make it illegal for any shipping company to include in its bills of lading a clause excluding the company from liability as ordinary carriers.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, *August 8, 1902.*

BRITISH PARLIAMENTARY TRADE COMMITTEE.

Manufacturers, merchants, capitalists, and business men generally in Great Britain are fully awake to the necessity of preparing to meet the competition of the United States. As an indication of what is being done here, I wish to call attention to the fact that there has been formed a commercial committee of members of the British Parliament—comprising, it is stated, 130 members and representing all political parties—whose object is to study from a nonpartisan standpoint the commercial needs of Great Britain and to give legislative effect to the points decided upon in conference. In a recent letter to the London Times, Mr. L. Sinclair, the honorary secretary of this commercial committee, gives the history and aims of the organization:

> The commercial committee is more directly the outcome of a series of meetings which I was the means of calling in the House of Commons to consider in what way the great interests of the trade and commerce of this country could be assisted and developed through the action of Parliament. The fixed idea which prompted the actual formation of the committee is the continuous, systematic, and practical study of questions concerning in any way the interests of British trade and commerce, with a view to removing the obstacles now encountered by reason of the many obsolete and prejudicial enactments and regulations, and the lack of businesslike methods of administration; and, furthermore, to initiate and promote new legislation.
>
> It must be acknowledged at once that this programme is very wide and a most difficult one to carry out with any sort of effectiveness, and indeed it would be absurd for the committee to aim at such an extended scope were it not that we know we shall receive the warm cooperation and support of industrial and commercial associations, chambers of commerce, and the various kindred organizations throughout the Empire.
>
> No great results can be expected until such time as the machinery has been for some while in full working order and the active cooperation of the public enlisted. Progress must of necessity at the outset be slow.
>
> Among the subjects which I hope will occupy the attention of the committee are: The question of tariffs, in regard to which foreigners seem to hold such advantages over our own producers to our own home markets; the question of our patent laws, and the disadvantages under which our inventors are placed; the question of commercial attachés and representatives in our colonies where foreign countries have agents; the inadequacy of our consular service; and the hardships and evil consequences resultant upon the factory and workshops act not having been framed by a Minister of Commerce fully acquainted with the exigencies of the cases.
>
> We have already begun to put ourselves into communication with the various commercial and trade associations of Great Britain, and through the members of Parliament representing them we are endeavoring to get into close touch with merchants and business men in order to learn the actual needs of commerce and to enable us to at once deal with legislation in connection therewith.
>
> I wish to state that I, or any of the other members of the executive committee, viz, Sir William Houldsworth, Sir W. H. Holland, and Mr. J. S. Randles, will be most happy to hear from public bodies interested in the work the commercial committee has in view.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, *August 11, 1902.*

NOTES.

The World's Commerce in 1901.—Consul John F. Winter, of Annaberg, writes, under date of July 19, 1902:

The import and export commerce of all the countries in the world amounted in 1901, according to German returns, approximately to $23,800,000,000, and was divided among the leading commercial nations as shown below, in round numbers:

Country.	Value.	Country.	Value.
Great Britain	$4,165,000,000	Switzerland	$380,800,000
British colonies (total)	2,618,000,000	Spain	282,400,000
Germany	2,468,060,000	China	305,000,000
United States	*2,118,200,000	Sweden	275,600,000
France	1,618,400,000	Argentina	280,000,000
Holland	1,332,800,000	Japan	238,000,000
Austria-Hungary	856,800,000	Brazil	238,000,000
Belgium	785,400,000	All other countries	4,624,340,000
Russia and Siberia	642,600,000	Total	23,800,600,000
Italy	571,200,000		

*According to United States Treasury returns, $2,340,000,000.

Chinese Iron Ore for Japan.—Consul S. S. Lyon transmits from Kobé, July 29, 1902, clipping from the Kobé Chronicle in regard to the Imperial Iron Foundry, as follows:

One of the most important questions to be considered by the committee appointed by the Government to consider ways and means for the successful working of the Imperial Iron Foundry at Yawata, Fukuoka prefecture—which has so far proved a failure—is the future supply of iron ore. The production of iron in Japan is limited, there being few mines in the northeastern district and in the vicinity of Hiroshima. There is no prospect of any new deposits of iron ore being discovered, and the only course open seems to be to work the rich Hanyang iron mine in China, as at first proposed.

A proposal was made by Baron Komura, Minister for Foreign Affairs, and Baron Hirata, Minister for Agriculture and Commerce, to secure the privilege of working the iron mine at Hanyang, it being intended to construct a steamer suitable for carrying the ore from China to Japan. Mr. Uchida, Japanese minister at Pekin, was instructed to sound the Chinese Government on the subject, but it is stated that the success of the proposal is very doubtful, as the Hanyang iron mine forms one of the most important sources of revenue of the Chinese Government. The Japanese Government, however, has not given up the idea. The two principal Japanese steamship lines are prepared to transport the ore from China.

Japanese Commercial Agent in Siberia.—Commercial Agent R. T. Greener reports from Vladivostock June 27, 1902:

A Japanese commercial agent is making a tour of inspection through Siberia. He will go to Nikolsk, Habarofsk, Blagoveschensk, Stretensk, Chita, Verkin-Udinsk, Irkutsk, Tomsk, Omsk, and return via the Chinese Eastern Railroad, through Manchuria, to Port Arthur. The object of this trip is understood to be the development of Japanese trade in Siberia and also the selection of eligible localities for more consular representatives of Japan. The agent will be accompanied by three graduates from the official Japanese Commercial School, all of whom are familiar with the Russian language. Full reports are to be made to the Foreign Office regarding the commercial prospects, etc., of each important Siberian city.

Soap Factory in Vladivostock.—Under date of July 5, 1902, Commercial Agent R. T. Greener writes from Vladivostock:

A new soap factory is to be opened at Vladivostock. Most of the soap has heretofore come from European Russia. The new factory has an encouraging opening. The owner lately sold 2,000 poods (72,224 pounds) and has 4,000 poods (144,448 pounds) in stock. He makes three qualities of soap—blue, yellow, and green. It is said they equal in grade those soaps imported from European Russia. After building his factory, the owner found that the necessary grease had to come from abroad, and there was an almost prohibitive duty on it. An appeal to St. Petersburg resulted in a decree permitting the grease to be imported duty free.

Decrease of Gold Output in the Klondike.—Consul H. W. Brush reports from Niagara Falls, August 8, 1902:

Mr. George H. Hees was recently sent to Dawson by the Canadian Manufacturers' Association to make a thorough examination into the business prospects of the Yukon Territory. He has issued his official report, and it is decidedly pessimistic. The total yield of gold last year in the Klondike was $24,000,000. The production of the coming year, according to the Government estimates, will not exceed $14,000,000, a falling off of nearly one-half. No new discoveries have been made for over a year, although since 1897 thousands of prospectors have been exploring every creek and mountain in the country. At Dawson, Mr. Hees reports ten applicants for every job, yet boat load after boat load of men continue to arrive, the transportation companies keeping up the illusion abroad that Dawson is the needy-man's paradise.

Expansion of Canadian Trade.—Consul Charles Deal sends from St. John's, August 28, 1902, a newspaper clipping with reference to Canadian trade, as follows:

> A statement just prepared by the customs department shows that Canada's trade with foreign countries continues to expand with surprising rapidity for a country of less than 6,000,000 population. The total trade of the Dominion during the last fiscal year exceeded $400,000,000, or about double that of the year 1890, which was the greatest year in the history of the country.
>
> The statement shows that while the great bulk of Canada's business is transacted with the United States and Great Britain, the former country, as usual, profits the most, and the rate of increase shows no sign of diminishing. England is the great selling market for many of Canada's products, but the United States is still her principal purchasing market, the preferential tariff on British goods having made no appreciable change in this respect.
>
> The excess of trade with the United States over that with Great Britain last year was $33,500,000. Imports from the United States increased over $10,000,000 and exports to the United States more than $3,000,000. In fact, the total import and export trade of Canada with the United States is nearly one-half her own foreign trade, being for the last year $192,005,461.
>
> Canada's third best customer is Germany.

Pulp Mill near Rimouski.—Under date of August 8, 1902, Commercial Agent C. A. Boardman writes from Rimouski:

A company has been organized to construct a mill to manufacture ground pulp, with a capacity of 25 tons of dry pulp per day, on the falls, about 3 miles from Rimouski. As the country is very rugged, and the snow deep in winter, an aërial cable will be used to convey the output of the mill to the shipping point. If this mill proves a success, it will be enlarged to include the manufacture of sulphite pulp and paper. The company owns areas of spruce land for 200 miles along the shores of the St. Lawrence. Most of the timber in this district is cut in short lengths, to be manufactured into deal for the English markets. The side boards only go to the United States. This leaves a large part of the tree in the woods, which remains there to rot. The plan is to manufacture these tops into pulp.

Fairs in Canada.—Commercial Agent F. S. S. Johnson, of Stanbridge, under date of August 25, 1902, says:

In order to more fully advertise United States goods in Canada, our manufacturers should arrange to send exhibits to the fairs which will be held next month in Quebec and Ontario. These exhibits should not be chosen at random, but should consist of the very best grade of goods. Farming implements and tools would undoubtedly be a great attraction and in all probability would open up a new market for these goods. Fairs will be held in the cities of Ottawa and Toronto, Ontario, and Sherbrooke, St. John's, and Bedford, Quebec.

Foreign Physicians in Peru.—Under date of July 18, 1902, Consul Charles V. Herdliska, of Callao, in reply to an inquiry* regarding the chances of success for an American physician in Lima, writes as follows:

Before a physician can enter upon the practice of his profession in Peru, he must pass a State examination upon medicine, conducted in the Spanish language. Upon being found qualified, a certificate is issued which entitles him to practice his profession in any part of the Republic. The opportunities for American physicians would seem to be good. Both Lima and Callao contain quite a large American and English colony, and the Peruvians themselves appear to have great faith in the American, English, German, and French physicians and surgeons on account of the advanced state of medical science in those countries.

Waterworks for Callao.—Minister Irving B. Dudley transmits from Lima, August 1, 1902, copy of a letter from the mayor of Callao, expressing the desire of that city to secure bids for furnishing piping and other material for the construction of its system of waterworks. Pamphlets (in English) containing detailed information for bidders accompany the report. These are filed in the Bureau of Foreign Commerce and will be distributed on application to those interested.

Belgian-Costa Rican Trade-Mark Convention.—Under date of August 11, 1902, Consul J. C. Caldwell writes from San José:

The Congress of Costa Rica has approved and the President has signed a trade-mark convention between this Republic and Belgium. The trade-marks to which this convention applies are those which legitimately belong to the manufacturers and traders using them. The convention is to be valid for five years, dating from exchange of ratifications; but if neither of the contracting parties shall give notice of its abrogation before expiration of the five years it shall remain in force from year to year until such notice shall be given.

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* The orginal letter has been sent to the correspondent.

Fruit Harvest in Saxony.—Consul J. F. Monaghan writes from Chemnitz, August 7, 1902:

An advance report has just been issued by the Saxon Fruit Raisers' Union giving an estimate of the coming harvest, based upon the individual opinions of all the important fruit raisers in the Kingdom of Saxony, to the number of 155. All of these reports estimate the yield of apples at from good to medium, and of pears at from medium to poor. One hundred and fifty-two reports place plums between poor and medium; and cherries poor to failure in yield. Eighty-six reports give the peach harvest as poor, and 77 give apricots as poor. All reports place the gooseberry harvest at good to very good. One hundred and fifty growers estimate currants as good; 120, raspberries as good; 142, strawberries as medium to good; 113, grapes as medium to good; 84, walnuts as failure to poor; 81, hazelnuts as medium to poor.

Exposition of German Articles at Barcelona.—Consul J. J. Langer writes from Solingen, August 5, 1902:

To further the trade between Germany and Spain, German manufacturers intend to send goods to the permanent exhibition in the Crystal Palace in Barcelona. Most of the German exhibitors are represented by one firm, which charges the following monthly rate for space at the Palace:

	Marks.	
1 to 5 square meters†	8.00=	$1.91
5 to 10 square meters	7.50=	1.79
10 to 20 square meters	7.00=	1.67
20 to 30 square meters	6.50=	1.55
30 to 50 square meters	6.00=	1.43

Duty on Ether Sulphur in the Netherlands.—Mr. John W. Garrett, chargé d'affaires at The Hague, under date of July 28, 1902, sends copies, with translation, of a recent royal order, whereby ether sulphur required in the preparation of cocaine is made exempt from customs duties in the Netherlands. The provisions read:

> The Minister of Finance, to whom demands for exemption shall be addressed, shall determine the quantity, as also the minimum, to be admitted on each occasion. Conveyance of the liquid to the factory shall be effected under seal, and admittance shall be effected under the supervision of the customs officials, in whose presence the liquid shall be immediately mixed with 250 grams (8.8 ounces) of petroleum ether (furnished by the collector of customs at the expense of the manufacturer) to every kilogram (2.2 pounds) of ether sulphuricus.

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† 1 square meter=1.196 square yards.

Fish Flour in Norway.—Under date of July 25, 1902, Consul V. E. Nelson writes from Bergen:

A great deal is done in Norway to improve and preserve the provisions produced in the country and to procure a market for them abroad. The fisheries represent one of Norway's chief industries, and quantities of fish are sold at very low rates, particularly during the summer. One way in which these are utilized is by means of an invention which quickly dries and pulverizes the flesh of fresh fish. The resulting product called fish flour, is easy to transport from one place to another and has great nutritive value. A new and profitable branch of industry might be established in America, by utilizing fish in this way.

Demand for Catalogues in Amsterdam.—Consul Frank D. Hill, of Amsterdam, under date of July 24, 1902, writes that it would be advisable for exporters of iron, steel, coal, and electrical supplies to send catalogues to that consulate, as he intends to devote a room exclusively to circulars of American firms, folders of American railways, steamship lines, cable companies, etc. He has received many visits of late from people interested in the import trade, and they desire data in regard to United States industries. Reports of chambers of commerce would also be useful.

Development of German Cable Lines.—Consul J. F. Winter writes from Annaberg, August 12, 1902:

According to statistics just issued, the German cable system consists of 73 lines connecting different parts of the home territory, 6 with the colonies, and 19 with foreign countries, making a total of some 17,000 miles. One-third of all the German cables are State concerns, while the other two-thirds are in the hands of private companies. Of the world's total mileage only 4 per cent belongs to Germany.

Demand for Furniture, Automobiles, and Machinery in South Africa.—Consular Agent W. D. Gordon, of Johannesburg, July 30, 1902, says:

I have been asked to get data as to household furniture, automobiles and autobicycles, and general farm machinery. If our manufacturers will send me prices, with weights, measurements, etc., I will place the information in the hands of the interested parties. In household furniture, only the better grades should be quoted, as transportation charges are so high that the delivered cost of the better qualities is but little more than that of the inferior.

Government of Zanzibar.—The Department is notified by the British embassy, under date of August 29, 1902, of the death of Seyyid Hamood, Sultan of Zanzibar, on the 18th of July, and of the succession to the Throne of his son, Seyyid Ali. Until the latter attains the age of 21, the Government of Zanzibar will be administered in his name by Mr. Alexander Stuart Rogers, first minister of the Sultan's Government, as regent.

Exposition at Melbourne.—Consul-General J. P. Bray reports from Melbourne, July 8, 1902, that an international exposition of arts, sciences, and industries will be held in that city during November and December, 1902, and January, 1903. It will be conducted by private enterprise. All communications as to space, etc., should be addressed to John A. Joubert, secretary, The Australian Federal International Exhibition, 229 Collins street, Melbourne, Victoria.

Trade Openings in the Philippines.—The Bureau of Foreign Commerce has received a letter from D. W. Yancey, Lucena, Tayabas province, Philippine Islands, saying that some industries in that vicinity are not being developed, principally on account of a lack of market. There is an opportunity to gather a high grade of sponge, as well as rubber and gutta-percha. In the timber line there is some fine ebony and other hard woods. Mr. Yancey asks for the names of firms in the United States who are willing to buy the sponge, rubber, and gutta-percha products from the local producers in the islands.

Registry of Land Titles in Nicaragua: Correction.—A report of the above title, appearing in ADVANCE SHEETS No. 1406, July 31, 1902 (CONSULAR REPORTS No. 264, September, 1902), was erroneously attributed to Consul C. V. Herdliska. The report was written by Consul A. L. M. Gottschalk, of San Juan del Norte.

French Demand for Cider Apples.—Consul J. C. Covert reports from Lyons, August 4, 1902, that he is asked to obtain prices for cider apples per 1,000 kilograms (2,205 pounds), delivered at Brest, Nantes, or Havre, duty paid in France.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) have been transmitted since the date of the last report to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
W. H. H. Graham, Winnipeg..	Aug. 13, 1902	Crop conditions.................	Department of Agriculture.
W. F. Grinnell, Manchester..	July 18, 1902	Health of Manchester......	Marine-Hospital Service.
H. W. Metcalf, Newcastle-on-Tyne.	Aug. 9, 1902	Durban floating dock........	Navy Department.
E. Schneegans, Saigon.........	July 3, 1902	Rice-market conditions.....	Department of Agriculture.
Do	July 27, 1902	........do	Do.
Do	Aug. 4, 1902	........do	Do.
D. T. Phillips, Cardiff...........	Aug. 27, 1902	Census of Glamorganshire.	Census Bureau.
M. H. Twitchell, Kingston, Ont.	Aug. 30, 1902	Crop conditions................	Department of Agriculture.
S. Smith, Moscow.................	Aug. 21, 1902	Russian fruit nursery........	Do.

FOREIGN REPORTS AND PUBLICATIONS.

French Guinea and Its Railway.—The following is summarized from the Revue du Commerce Extérieur, Paris, July 5, 1902:

French Guinea is one of the ancient dependencies of the Senegal. It obtained its autonomy in 1890 under its primitive name of Rivières du Sud, and comprises the old French settlements of Carabane, north of Portuguese Guinea, and Dubréka and Benty, north of Sierra Leone. French traders visited the coast, supplying the inhabitants with cotton cloths, brandy, flint guns, and powder, and receiving in exchange palm nuts and oil of sesame. They could ascend the rivers only for a short distance, being driven back by the fanaticism of the natives and the difficulties of the region. The conquest of the Sudan and the incessant campaigns directed against Samory finally attracted attention to Rivières du Sud, and it was found that supplies to the expeditionary columns could be sent more easily through this part of Senegambia than by the long river route of the Senegal and the land route or railway, between the Upper Senegal and the Niger. The disappointments experienced during the construction of the Bafoulabé road suggested the building of a direct line from the Atlantic coast to the Upper Niger. Konakry, a point nearer to the sea than the settlement of Dubréka, was created and made the capital. The railway of Konakry, passing through a picturesque and fertile country, will become the real path of commercial penetration and a future source of wealth to the colony, facilitating the transportation of native products from the interior. The earthwork of the road has already been pushed to a distance of 93 miles from Konakry; the first locomotive was expected June 1, and it is expected that the line will be ready for traffic by the end of 1903. It will then be very near Timbo, the chief town of Fonta-Djalon.

The present terminus of the line, the village of Kindia (1,443 feet above the sea) is overlooked by a mountain of some 4,600 feet. About midway up the mountain is a large cultivated plateau, where it would be possible to establish a provisional sanatorium for Europeans, under good conditions as regards climate and hygiene. The soil of the high plateau of Fonta-Djalon is adapted to many European cultures. It already furnishes 1,000,000 cattle and $42,460 worth of undressed skins annually to the export trade.

The export of rubber from French Guinea was figured last year at $1,462,940, going for the most part to English and German markets; of palm nuts, $92,061, also going to Germany and England; of groundnuts, $22,967, going to France, Germany, and Sierre Leone. Gum, sesame, wax, and ivory are also important articles of export. The total of exportations amounted to $1,887,540, and of the reexport trade to $72,375. The trade of the colony is more active with England than with France, and is not governed by the French customs tariff. The import trade comprised:

Coarse cotton cloth	$1,042,200
Works in metal	205,931
Food products	137,802
Liquors	96,693
Wine, French	38,600
Other	880,852
Total	2,422,078

The work of supplying Konakry with potable water, by tapping the waters of the Lamékouri, some 28 miles distant, is well under way. The water pipes will follow the caravan routes to within 4 miles of Konakry, where they take the line of the railway. The daily delivery of water will be 74,165 cubic feet at low water. The expense is estimated at about $386,000.

As regards the mining industry of the colony, six permits for explorations were given during the month of May, 1902.

Trade of Goa in 1901.—The following statistics, showing the value of the trade of Goa in 1901, are taken from British Foreign Office reports, No. 2794:

The imports and exports carried by the West of India Portuguese Railway during the years 1900 and 1901 were:

Description.	1900.	1901.
	Tons.	*Tons.*
Imports	24,894	25,772
Exports	5,849	4,412

The total value of goods (excluding those in transit) dealt with by the Mormugão custom-house during 1901 was:

Description.	Dutiable.		Free.	
	Rupees.		*Rupees.*	
Imports	885,441	$286,882	16,827	$5,452
Exports	28,455	9,219	373,890	121,140

The total value of goods in transit, not dutiable, was 8,171,034 rupees ($2,647,-415). There was an increase in the trade via the railway, owing to an improvement in crops over the southern Mahratta country. The oil business is developing, and it may be necessary to erect a second tank at Mormugão. It would greatly facilitate trade if the British customs would cease to require "applications" and "certificates" at Castle Rock for commodities not produced in Goa, such as linseed, castor seed, teel seed, sandalwood, etc. At present, wheat, cotton, and a few other small items are allowed to be sent through to Bombay or other British ports without the above documents being produced. The following table shows the principal articles carried by the West of India Portuguese Railway, including transit traffic, during the years 1900 and 1901:

Article.		1900.	1901.
Animals	number	4	13
Baggings	tons	691	578
Beer	do	515	415
Bones	do	27	188
China and earthen ware	do	2	3
Chunam (lime)	do	58	61
Coal and coke	do	31	....
Cocoanuts	do	6,177	3,790
Coffee	do	139	236

Article.		1900.	1901.
Cotton:			
Raw	tons	10,995	8,240
Manufactured and twist	do	1,261	737
Drugs and medicines	do	80	39
Dyeing materials	do	761	399
Fibrous products	do	41	35
Fish	do	844	712
Fruits and nuts	do	1,452	1,050
Grain and pulse	do	4,879	8,899
Gum and resin	do	24	94
Kerosene oil	do	4,388	7,388
Liquor	do	47	34
Material for other railways	do	232	61
Mats	do	29	21
Metals	do	882	4,388
Oils, vegetable	do	611	386
Paints and colors	do	63	30
Provisions	do	302	264
Revenue stores	do	5,484	3,835
Salt	do	10,922	11,212
Seeds, oleaginous and other	do	8,936	14,410
Silk	do	2	2
Skins and leather	do	64	71
Spices	do	372	1,233
Stone and marble	do	222	180
Sugar	do	410	1,220
Tea	do	5	5
Tiles	do	707	514
Tobacco	do	261	381
Timber and wood	do	564	621
Vegetables	do	11	15
Wine	do	6	9
Woolen piece goods	do	33	21
Wool	do	15	12
All other	do	1,455	1,968

Commerce of Togoland in 1901.—A recent edition of the Deutsche Kolonialzeitung, of Berlin, says:

The total trade of Togo in 1901 amounted to $2,002,163, of which $1,124,050 was for the import trade and $878,113 for exports. These figures mark the continuation of a remarkably favorable development, as the following statement for the last six years shows:

Year.	Imports.	Exports.	Total
1896	$449,068	$393,037	$842,105
1897	470,274	183,504	653,778
1898	592,840	349,975	942,815
1899	780,571	614,683	1,395,254
1900	836,995	728,019	1,565,014
1901	1,124,050	878,113	2,002,163

A particularly gratifying sign of the advance in resources and wealth of the colony is the fact that the import of cereals has materially decreased—from $30,226 to $3,808—while the import of cotton goods has increased—from $232,288 to $325,822. The export of gum was valued at $63,070 in 1901, compared with $123,998 in 1900. This retrogression is due in a measure to lower prices, but also to the quantity, which was 98.9 metric tons in 1900 and 63.7 tons in 1901. The export of palm nuts was valued at $427,686 and of palm oil at $353,430.

The following statements show the values of the principal articles imported into and exported from Togoland during the years 1900 and 1901:

Description.	1900.	1901.
Imports.		
Cotton and cotton goods	$232,264	$325,796
Grain and other agricultural products	30,276	3,872
Wood and wood wares	29,972	45,555
Groceries	51,366	72,848
Salt	29,954	31,273
Spirits	114,395	225,966
Tobacco	52,038	59,415
Other articles	296,730	359,326
Total	836,995	1,124,051
Exports.		
Gum	124,088	62,026
Cocoanuts	338,636	428,012
Palm oil	241,590	353,368
Other articles	23,705	34,707
Total	728,019	878,113

Commerce of Reunion.—According to La Dépêche Coloniale, of Paris, the trade of the island of Reunion in 1901 was $8,101,459, the largest total in the last five years, as shown by the following table:

Year.	Imports.	Exports.	Total.
1897	$4,180,705	$3,567,128	$7,747,833
1898	3,814,697	3,672,376	7,487,073
1899	4,044,574	2,963,993	7,008,567
1900	4,251,667	3,370,027	7,621,694
1901	4,588,758	3,512,701	8,101,459

The value of the import trade in the most important articles was distributed as follows:

Description.	Value.	Description.	Value.
Mules	$136,393	Saltpeter.	$88,413
Lard	143,511	Common soap	64,352
Grain and flour	151,991	Jute sacks	51,271
Rice	1,204,950	Textiles:	
Dried vegetables	178,959	Cotton	308,436
Colonial goods	45,413	Linen	48,907
Ordinary wine	299,313	Machinery	98,552
Cement	69,335	Ironware	116,989
Coal	113,914	Steel ware	125,574

The exports, which amounted to $3,512,701, were for the most part directed to France. The chief articles of export were:

Tapioca and starch flour	$354,087
Sugar	2,227,468
Coffee	36,524
Vanilla	375,393
Tobacco	40,711
Essences	181,895
Rum	109,755

Marble Production of Greece.—An article in the Nachrichten für Handel und Industrie, Berlin, June 20, 1902, says:

> The marble quarries of Greece are apparently inexhaustible. All kinds, qualities, and colors of marble are found there, and it is preeminently adapted for architectural purposes, as well as for the plastic art. The most beautiful and most highly valued for sculpture is the white marble of Paros. The Pentilican marble, the white and gray-blue, are also especially renowned; the white variety resembles the Parian closely, except that it is denser and finer grained. In the old marble quarries near Larissa, monoliths are still found, which are shipped to England. The islands of Naxos and Tinos furnish a white and gray marble; Skyros, a mottled black and blue, like that of Carrara, besides a yellow variety; Dimaristika, on the Peloponnesus, a black or green veined, and a white and red; and Trikeri, in Thessaly, a clear gray. In regard to quantity, the two cities of Athens and Piræus place upon the market annually from 88,292 to 105,950 cubic feet of marble, and the demand is increasing. Exact statistics regarding the output of private quarries are not available. Only two companies—an English and a Greek—are engaged in the marble business. The white marble is valued at $27 to $31 per cubic meter (35.3 cubic feet); the gray-blue marble, at $23 to $27 per cubic meter. The total value of the marble quarried from the Pentilican veins is estimated at about $77,200 annually. The share of the English company in the year 1900 amounted to 52,975 cubic feet.

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PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE.*

The publications of the Bureau of Foreign Commerce, Department of State, are:

I.—COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—CONSULAR REPORTS, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

III.—ADVANCE SHEETS, CONSULAR REPORTS, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

IV.—EXPORTS DECLARED FOR THE UNITED STATES, issued quarterly, and containing the declared values of exports from the various consular districts to the United States for the preceding three months. There is also issued an annual edition of Declared Exports, embracing the returns for the fiscal year.

V.—SPECIAL CONSULAR REPORTS, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued by the Bureau prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880–81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885–86 (a portion of this work was published as CONSULAR REPORTS No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all these publications except Tariffs in Central America, etc., are exhausted and the Department is, therefore, unable to supply copies.

In 1890, the Department decided to publish reports on special subjects in separate form, to be entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Files in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Stave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

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* Formerly Bureau of Statistics. Name changed to Bureau of Foreign Commerce by order of the Secretary of State, July 1, 1897.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia, Africa, Australasia, and Polynesia. Supplement (1900). Tariffs of Chile and Nicaragua.

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Vol. 19 (1900).—Paper in Foreign Countries; Uses of Wood Pulp.

Vol. 20 (1900).—Part I. Book Cloth in Foreign Countries, Market for Ready-Made Clothing in Latin America, Foreign Imports of American Tobacco, and Cigar and Cigarette Industry in Latin America. Part II. School Gardens in Europe. Part III. The Stave Trade in Foreign Countries.

Vol. 21 (1900).—Part I. Foreign Markets for American Coal. Part II. Vehicle Industry in Europe. Part III. Trusts and Trade Combinations in Europe.

Vol. 22 (1900 and 1901).—Part I. Acetic Acid in Foreign Countries. Part II. Mineral-Water Industry. Part III. Foreign Trade in Heating and Cooking Stoves.

Vol. 23 (1901).—Part I. Gas and Oil Engines in Foreign Countries. Part II. Silver and Plated Ware in Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Cotton Textiles in Foreign Countries, Files in Spanish America, Fire and Building Regulations, Fruit Culture, Gas in Foreign Countries, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Port Regulations, Refrigerators and Food Preservation; Sericulture, etc.; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

There was also published, in 1899, Proclamations and Decrees during the War with Spain, comprising neutrality circulars issued by foreign countries, proclamations by the President, orders of the War and Navy Departments, and war decrees of Spain.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications of the Bureau available for distribution, copies are mailed to applicants without charge. In view of the scarcity of certain numbers, the Bureau will be grateful for the return of any copies of the monthly or special reports which recipients do not care to retain. Upon notification of willingness to return such copies, the Department will forward franking labels to be used in lieu of postage in the United States, Canada, the Hawaiian Islands, Porto Rico, and Mexico.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address in notifying the Bureau of the fact.

In order to prevent confusion with other Department bureaus, all communications relating to consular reports should be carefully addressed, "Chief, Bureau of Foreign Commerce, Department of State, Washington, U. S. A."

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston made the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to $20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States."

The following statements, running from January 1, 1874, to October 1, 1902, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1898, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1875–1877, 1879–1882, 1884–1887, 1895, and 1897 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S.gold.	Coins.
Argentine Republic	Gold and silver	Peso	$0.96,5	Gold—argentine ($4.82,4) and ½ argentine; silver—peso and divisions.
Austria-Hungary*	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
British Honduras	do	do	1.00	
Chile	do	Peso	.36,5	Gold—escudo ($1.25), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Costa Rica	do	Colon	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centisimos.
Cuba	Gold and silver	Peso	.92,6	Gold—doubloon ($5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Ecuador †	do	Sucre	.48,7	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling.	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
India ‡	Gold	Rupee	.32,4	Gold—sovereign ($4.8665); silver—rupee and divisions.
Italy	Gold and silver	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan §	Gold	Yen	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	do	Dollar	1.00	
Netherlands	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Peru ‖	do	Sol	.48,7	Gold—libra ($4.8665); silver—sol and divisions.
Portugal	do	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia ¶	do	Ruble	.51,5	Gold—imperial ($7.718) and ½ imperial ($3.80); silver—¼, ½, and 1 ruble.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver 5 pesetas.
Sweden and Norway.	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	do	Peso	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

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* The gold standard went into effect January 1, 1900 (see Commercial Relations, 1899, Vol. II, p. 7). Values are still sometimes expressed in the florin, which is worth 2 crowns.

† Gold standard adopted in November, 1900. (See CONSULAR REPORTS No. 225, June, 1899.)

‡ For an account of the adoption of the gold standard, see CONSULAR REPORTS No. 238, p. 359.

§ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

‖ Gold standard adopted October 13, 1900.

¶ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896–97, p. 254.

B.—*Countries with fluctuating currencies, 1874–1898.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1878.	1883.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin	$0.47,6	$0.45,3	$0.40,1	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.81,2	.69,9	.68	.85
Central America	do	Peso	.96,5	.91,8	....	.69,9	.68	.85
China	do	Haikwan tael	1.61	....	....	....	....	....
Colombia	do	Peso	.96,5	.96,5	.81,2	.69,9	.68	.85
Ecuador	do	do	.96,5	.91,8	.81,2	.69,9	.68	.85
Egypt†	Gold	Pound (100 piasters).	....	4.97,4	4.90	4.94,3	....	....
India	Silver	Rupee	.45,8	.43,6	.38,6	.32,2	.32,3	.40,4
Japan	Gold	Yen	.99,7	.99,7	....	.99,7	.99,7	.99,7
	Silver		....	....	.87,6	.75,3	.73,4	.91,7
Mexico	do	Dollar	1.04,7½	.99,8	.88,2	.75,9	.73,9	.92,3
Netherlands‡	Gold and Silver.	Florin	.40,5	.38,5	....	....	....	....
Peru	Silver	Sol	.92,5	.91,8	.81,2	.69,9	.68	.85
Russia	do	Ruble	.77,17	.73,4	.65	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.73,3	.63	.61,4	.76,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1891.	1892.	1893.	1894.	1896.	1898.
Austria-Hungary*.	Silver	Florin	$0.38,1	$0.34,1	....	....	....	....
Bolivia	do	Boliviano	.77,1	.69,1	$0.61,3	$0.51,6	$0.49,1	$0.42,4
Central America	do	Peso	.77,1	.69,1	.61,3	.51,6	.49,1	.41,4
Colombia	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Ecuador	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
India	do	Rupee	.36,6	.32,8	.29,2	.24,5	.23,3	.20,1
Japan§	do	Yen	.83,1	.74,5	.66,1	.55,6	.52,9	....
Mexico	do	Dollar	.83,7	.75	.66,6	.56	.53,3	.46
Peru	do	Sol	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Russia§	do	Ruble	.61,7	.55,3	.49,1	.41,3	.39,3	....
Tripoli	do	Mahbub of 20 piasters.	.69,5	.62.3	.55,3	.46,5	.44,3	....

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* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (see CONSULAR REPORTS No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

§ See footnote, table of fixed currencies.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1899.				1900.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.43,9	$0.43,4	$0.44,3	$0.43,6	$0.42,7	$0.43,6	$0.43,8	$0.45,1
Central America.	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.45,1
China	Amoy tael	.71	.70,2	.71,6	.70,5	.69,1	.70,5	.70,9	.72,9
	Canton tael	.70,8	.70	.71,4	.70,3	.68,9	.70,3	.70,7	.72,7
	Chefoo tael	.67,9	.67,2	.68,4	.67,4	.66,1	.67,4	.67,8	.69,7
	Chinkiang tael	.69,3	.68,6	.69,9	.68,9	.67,5	.68,8	.69,3	.71,2
	Fuchau tael	.65,6	.65	.66,2	.65,2	.64	.65,2	.65,6	.67,4
	Haikwan tael	.72,2	.71,4	.72,8	.71,8	.70,3	.71,7	.72,1	.74,2
	Hankau tael	.66,4	.65,7	.67	.66	.64,7	.65,9	.66,3	.68,2
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.68,2	.67,5	.68,8	.67,8	.66,5	.67,7	.68,2	.70,1
	Niuchwang tael.	.66,5	.65,9	.67,1	.66,1	.64,8	.66,1	.66,5	.68,4
	Shanghai tael	.64,8	.64,1	.65,4	.64,4	.63,1	.64,4	.64,8	.66,6
	Swatow tael	.65,5	.64,9	.66,1	.65,1	.63,9	.65,1	.65,5	.67,4
	Takao tael	.71,4	.70,7	.72	.71	.69,6	.70,9	.71,4	.73,4
	Tientsin tael	.68,8	.68	.69,4	.68,3	.67	.68,3	.68,7	.70,7
Colombia	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.45,1
Ecuador †	do	.43,9	.43,4	.44,3	.43,6	....	....	....	....
India	Silver rupee‡	.20,8	.20,6	.21	.20,7	.20,3	.20,7	.20,8	....
Mexico	Silver dollar	.47.7	.47,2	.48,1	.47,4	.46,4	.47,3	.47,6	.49
Persia	Silver kran	.08,1	.08	.08,2	.08	.07,9	.08	.08,1	.08,3
Peru †	Silver sol	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.48,7

Countries.	Monetary unit.	1901.				1902.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.46,8	$0.45,1	$0.43,6	$0.42,8	$0.41,3	$0.40,3	$0.38,2	$0.38,4
Central America.	Silver peso	.46,5	.45,1	.43,6	.42,8	.41,3	.40,3	.38,2	.38,4
China	Amoy tael	.75,7	.72,9	.70,5	.69,1	.66,9	.65,1	.61,8	.62
	Canton tael	.75,5	.72,7	.70,3	.68,9	.66,7	.64,9	.61,7	.61,9
	Chefoo tael	.72,4	.69,7	.67,4	.66,1	.63,9	.62,3	.59,1	.59,3
	Chinkiang tael	.74	.71,2	.68,8	.67,5	.65,3	.63,6	.60,4	.60,6
	Fuchau tael	.70,1	.67,5	.65,2	.64	.61,8	.60,2	.57,2	.57,4
	Haikwan tael	.77,1	.74,2	.71,7	.70,4	.68	.66,3	.62,9	.63,1
	Hankau tael	.70,9	.68,2	.65,9	.64,7	.62,6	.60,9	.57,9	.58
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.72,8	.70,1	.67,8	.66,5	.64,3	.62,6	.59,5	.59,6
	Niuchwang tael.	.71	.68,4	.66,1	.64,8	.62,7	.61,1	.58	.58,2
	Shanghai tael	.69,2	.66,6	.64,4	.63,2	.61,1	.59,5	.56,5	.56,7
	Swatow tael	.70	.67,4	.65,1	.63,9	.61,8	.60,2	.57,1	.57,3
	Takao tael	.76,2	.73,4	.70,9	.69,6	.67,3	.65,5	.62,2	.62,4
	Tientsin tael	.73,4	.70,7	.68,3	.67	.64,8	.63,1	.59,9	.60,1
Colombia	Silver peso	.46,8	.45.1	.43,6	.42,8	.41,3	.40,3	.38,2	.38,4
Mexico	Silver dollar	.50,9	.49	.49	.46,4	.44,9	.43,7	.41,5	.41,7
Persia	Silver kran	.08,6	.08,3	.08,3	.07,9	.07,6	.07,4	.07	.07,1

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* The "British dollar" has the same legal value as the Mexican dollar in Hongkong, the Straits Settlements, and Labuan.

† See footnote, table of fixed currencies.

‡ The sovereign is the standard coin of India, but the rupee is the money of account. See also table of fixed currencies.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Berkovets	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do*	Japan	1.31 pounds.
Do	Java, Siam, and Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110 11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chetvert	Russia	5.7748 bushels.
Chih	China	14 inches.

*More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Funt	Russia	0.9028 pound.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	6 feet.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Koku	Japan	4.9629 bushels.
Korree	Russia	3.5 bushels.
Kwan	Japan	8.28 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11⅜ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Spain	1.0144 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1½ acres.
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	82 2/7 pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles.
Do	Denmark (geographical)	4.61 miles.
Milla	Nicaragua and Honduras	1.1493 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.82838 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands.	137.9 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Spain	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile,* Chile, Mexico, and Peru	101.41 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¼ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acres.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9305 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.

*Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the Peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Tsubo	**Japan**	**6 feet square.**
Tsun	**China**	**1.41 inches.**
Tunna	**Sweden**	**4.5 bushels.**
Tunnland	**Sweden**	**1.22 acres.**
Vara	**Argentine Republic**	**34.1208 inches.**
Do	**Central America**	**32.87 inches.**
Do	**Chile and Peru**	**33.367 inches.**
Do	**Cuba**	**33.384 inches.**
Do	**Curaçao**	**33.375 inches.**
Do	**Mexico**	**33 inches.**
Do	**Paraguay**	**34 inches.**
Do	**Spain**	**0.914117 yard.**
Do	**Venezuela**	**33.384 inches.**
Vedro	**Russia**	**2.707 gallons.**
Vergees	**Isle of Jersey**	**71.1 square rods.**
Verst	**Russia**	**0.663 mile.**
Vlocka	**Russian Poland**	**41.98 acres.**

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.417 gallons.
Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.

Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

Vol. LXX. NOVEMBER, 1902. No. 266.

GERMAN REGULATIONS FOR INSURANCE COMPANIES.

Referring to my report of August 29, 1901, transmitting translation of the Imperial German law of May 12, 1901, for the regulation and control of private insurance companies (which translation was published in ADVANCE SHEETS No. 1164, of October 16, 1901),* I have now to submit for the same purpose the original text and a translation, made by Mr. William Mayner, stenographic typewriter at this consulate, of the code of regulations for the government of private insurance companies in Germany, which has been formulated and published under date of July 1, 1902, by the bureau of supervision, which was created by the statute above alluded to.

It prescribes in elaborate detail the methods to be observed by insurance companies in making their annual reports, giving precise forms for various branches of accounts, particularly those relating to surplus, the manner of its investment, etc. The text of these instructions will be of important interest to any insurance company which may be contemplating establishing or continuing business in Germany.

FRANK H. MASON,
Consul-General.

BERLIN, *July 17, 1902*.

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*CONSULAR REPORTS No. 225 (December, 1901).

[Translation.]

INSTRUCTIONS AS TO THE RENDERING OF ACCOUNT OF THE LARGE LIFE-INSURANCE ENTERPRISES UNDER SURVEILLANCE OF THE IMPERIAL OFFICE OF SUPERVISION.

I. The following instructions are directions for those large insurance enterprises doing business in the German Empire and subject to supervision of the imperial office of supervision of private insurance enterprises, being handed to same by the office of supervision with the request for compliance. It is reserved to issue later on, separately, easier instructions for the other companies, especially for the small associations, according to section 53 of the imperial law re private insurance enterprises, of May 12, 1901. (Imperial Law, p. 139.)

Foreign life-insurance enterprises, admitted to do business in Germany, must render accounts of their total and their German business separately. The balance and the annual report are to be drawn up by foreign as well as German insurance companies in German coinage, and to be rendered in the German language; the rate of exchange must be stated.

II. The annual report to be drawn up according to section 55, 1, etc., and to be handed to the imperial office of supervision, comprises:

1. The profit and loss account, stating the application of the surplus, as per Blank L1.

2. The balance, as per Blank L2.

In filling in Blanks L1 and L2 the points to be inferred from the instructions attached must be observed.

The blanks are a pattern also as regards the size.*

Where an item contained in the blank does not come into question with one or the other office, a notification must be inserted.

It is not admissible to lump together several items of the blank.

An enterprise in which there exist other insurance branches, or which does any other business, has to separately draw up and hand in the profit and loss account of the life-insurance branch, replying to all the respective items. If the respective figures are not obtainable from the books, they can be proportionately estimated in a manner deemed equitable by the directors, and specified in the explanations. Those life-insurance companies whose business sphere comprises the so-called small life insurances (peoples', workingmen's, burial, etc.) without any, or with an incomplete, medical examination—so that there are made for this branch extra business arrangements and special insurance conditions, tariffs, and commission rates, deviating materially from general insurance conditions—must draw up a separate profit and loss account for this insurance branch.

Such life-insurance companies as keep the profit and loss of the several kinds of insurance separately can fill in Blank L1 separately for each of these kinds of insurance.

III. The annual report, which must describe, in accordance with section 55, 1, etc., the condition and development of the business during the expired business year, and which must be communicated on demand to every policy holder, as per section 55, 3, etc., must contain the balance and give the requisite explanations of the several items. The exhibit of the balance in the annual report must be made on the lines of Blanks L1 and L2. The items IV and VI of the Receipts and III and VII, 2, of the Expenses, however, may be lumped together in the profit and loss account. Those items which do not come into question for the respective company can be omitted. The officially required size is not obligatory for the publications in the annual report. There must be especially stated in the annual report:

(*a*) What kinds of insurance (whole-life, endowment, children insurances, etc.) have been carried on during the account year; insurance associations on mutual principles have to state separately whether, and to what extent, insurances with fixed premiums have been closed (section 21, 2, etc.).

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* The official form is different from the one printed herein.

(*b*) The fluctuation of the insurance in force during the business year, separately according to kinds of insurance, and insurances with and without profit.

(*c*) How the profits are to be divided and what provisions the statutes contain as to covering a loss; the totals of the premiums participating in the profit, the shares that have been allotted to same, and the percentages of profit are to be given separately for the separate plans of profit.

(*d*) What the position is of the capital investments and the rates of interest; information must be given also as to any sales or purchases of real estate. In case of sales, the value of the real estate as last contained in the balance sheet must be given, together with the price realized. Explanations must be given as to the profits and losses on investments.

(*e*) Special particulars of the cost of administration must be stated, giving especially the separate amounts of the following items:

1. Salaries and other allowances of the employees;
2. Traveling expenses;
3. Agency commissions;
4. Printing;
5. Postage;
6. Advertising;
7. Legal expenditure for law suits;
8. Other expenses of administration.

Reason for any considerable increase in the cost of administration must be given.

(*f*) Particulars of unexpected and other not specially enumerated receipts and expenses.

(*g*) Explanation as to the use made of the surplus, as far as one is necessary.

(*h*) Comparison of the theoretical and actual mortality, and an illustration of the financial result accruing therefrom.

IV. Besides that, special explanations are to be handed to the imperial office of supervision. They must contain especially:

(*a*) Particulars as to the policy fees for the several kinds of insurance, as well as all other amounts collected for the issue or alteration of policies.

(*b*) Particulars as to outstanding interests and rents.

(*c*) A statement how the outstanding premiums and other outstanding amounts are distributed over the several years.

(*d*) Particulars of any special payments of commissions, gratuities, rebates, contributions to costs of management, etc., in the reinsurance business.

(*e*) General illustration of loans on policies, stating the rate of interest.

(*f*) Statement as to the number of bills of exchange, negotiable according to the regulations of the German Imperial Bank, balance with banking firms and other insurance companies. The same must show whether, and how many, banks participate in the balance, and what purposes these balances serve. Balances in favor of other insurance are to be treated the same.

(*g*) Principles as to the entering in the balance of the premium reserves, the premium transfers and outstanding premiums, as well as the principles of calculating the surrender values and changes; it is to be stated whether and to what extent any deductions of the premium reserves are being made in the manner of the Zillmer theory or any other.

(*h*) Particulars of the gross premiums upon which calculations of charges are to be based, as per section 81, etc., for the supervision of the imperial office of supervision, accruing from insurances closed in Germany during the business year, and particulars of the surplus or share in the profit to be deducted from these gross premiums.

Further—

(*i*) Insurance companies whose starting expenses have not yet been amortizated have to render a detailed account as to the position of the amortization.

Finally there are—

(*k*) Explanations to be given to those items in the balance which, without being mentioned above, seem to require such an explanation.

(*l*) Number, cause, and issue of the several suits occurred in the business year, brought before courts of law or arbitration, as to insurance claims made on the company's own policies, stating the amount of the several cases of dispute. As to suits of this kind that remain pending, further particulars must be given in the explanations of the next annual balance.

(*m*) The investment of deposited guaranties must be separately given, if not shown on the balance sheet.

V. Particulars in figures must be added to the explanations above required, using Blanks L3 to L15, of which also the size is an official pattern.*

VI. Those companies which have to draw up a special profit and loss account for the small insurances carried on, besides the ordinary life insurance (see II above), have to add, for the former kind of insurance, the following statements, with the necessary explanations:

(*a*) As to the insurance in force at the end of the business year, separate for each kind of insurance—whole-life, endowment, children insurance, etc. (Blank L3).

(*b*) As to the distribution of receipts from premiums, and of expenses on insurances falling due, separately as per "*a*" (Blank L4).

(*c*) As to the fluctuation of the profit reserves (Blanks L5*a*, L5*b*).

(*d*) As to the distribution of management expenses (Blank L7).

(*e*) As to the fluctuation of the insurance in force (Blank L12).

(*f*) As to the comparison of theoretical and actual mortality, besides a calculation of the profit or loss from the mortality (Blanks L13, L15).

VII. The balances and the explanations must be signed by the board and be handed to the imperial office of supervision, together with the particulars in figures belonging to same, as well as a copy of the minutes signed by the board, showing that the highest organ has sanctioned the balance, within two months of the sanctioning, but not later than seven months after expiration of the business year. There is to be added at the same time, according to section 56, 2, of the private insurance law, the required statement of an expert that the inserted premium reserve is correctly calculated as per section 56, 1, etc.

Within the same period the board must publish, at the expense of the business, the annual account (profit and loss account and balance sheet) in the simplified form, as per III, in the Reichs-Anzeiger, as well as in the other papers appointed for the publication of the business. Copies of the papers containing the publication have to be handed to the imperial office of supervision, together with the accounts.

VIII. The requirements for rendering the annual accounts apply for the first time to the business year commencing after December 31, 1901.

LIFE INSURANCE.

I.—*Instructions for drawing up the profit and loss account.*

A.—RECEIPTS.

I. The amounts at the close of the preceding year are to be given, as shown in the balance and the distribution of profits.

Figure 2.—The premium reserves must include the capital covering annuities. The method in which the amount, to be stated as per figure 2, is distributed among

the several kinds of insurances appears from the inclosure (Blank L3), to be drawn up at the close of the preceding year according to the requirement of X re expenses.

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* The officially required pattern differs from the one printed herewith.

Figure 3.—The system of calculating the premium transfers is to be shown in the explanations of the annual account. It is to be a principle that all such premiums are to be shown as premium transfers, which have been already enumerated as receipts at the close of the preceding years for periods exceeding that business year. It must be especially stated how far they are included in the calculation of the premium reserve.

Figure 4.—As a reserve for pending insurance claims (reserve for claims) those amounts must be inserted, including that share still kept with the premium-reserve fund, which were to be put back for insurance claims, having already been incurred at the close of the preceding year, but not settled by payment. There must be taken into consideration, besides the cases for which the obligation of payment was not yet fully established, also those cases where the amounts due have not yet been called for. Therefore, any amounts of annuities, payable during the preceding year, but not yet collected, have to be stated. It is not necessary to separate the several amounts, as this takes place at the close of the preceding year on Blank L4.

Figure 5.—The profit reserve of the insured is to be shown in one amount, independent of the plans of profit, especially showing the increase from the surplus of the preceding year.

Only such amounts are to be here inserted as profit reserve which are to be accumulated according to the distribution plan of profits in order to be paid out later on. On special inclosures (Blanks L5*a*, L5*b*), the amounts falling to the several dividend plans are to be separately given in their total and their increase. Such profit shares, however, which were due at the close of the preceding year, but have not yet been collected, or which are intended by the insured as separate capital accumulations, bearing interest and payable at any time, must be given under figure 6 (see note to XII of Expenditure).

Figure 6.—As "other reserves" are to be shown, in one lump sum, all remaining reserves and amounts put by which the company had to show at the end of the previous year. The distribution of this amount among certain reserve funds, naming each separate fund, is to be shown in a special inclosure (L6), on which the transfer from the preceding year and any increase from the surplus of the preceding years are to be kept separate. Under the heading of figure 6 there are to be enumerated, among other items:

A. Profit shares of the insured not yet paid out.

B. Profit shares of the insured intended for capital accumulations bearing interest.

C. War reserve fund, special securities (among others, any special reserves for administration expenses for insurances with one or a limited number of payments of premium).

D. Reserve for not collected surrender values, and reserves for reinforced insurances. These amounts are to be kept with the premium reserve fund.

II. Here the premiums collected during the business year are to be enumerated in one amount, according to the stated kinds of insurance, separately for the insurance policies closed by the company itself and those taken as reinsurance. The premium receipts are to be here given without any deductions for dividends, commissions, rebates, etc. The further division of the premium receipts is given in the special inclosure (Blank L4).

III. All fees collected by the company on policy fees, and fees of acceptance, and any other amounts collected for the issue and alteration of policies, are to be here inserted; they are to be more clearly illustrated in the separate explanations, showing the policy fees for the separate kinds of insurance. It is not admissible to reduce the administration, etc., expenses by these amounts.

IV. As returns on capital are to be considered not only interests and rents, but also all receipts from real estates, including the rental value of the company's offices occupied in their own building, etc. These are to be included in the rents. Under figure 2 there is, for instance, also to be shown the interest charged on delayed premium payments. They must in no case be deducted from the cost of administration. A further separation takes place in the inclosures to the assets on the balance sheet.

V. Besides the profit on the exchange in the balance sheet and the profit on the exchange of stock sold, drawn, or otherwise disposed of, profits may accrue from sales of real estate whose selling price exceeds the book value on the balance sheet, as well as from commissions or mortgages. Such receipts are to be shown under the heading of figure 2 with the profits on exchange, and more fully illustrated in the explanations. Particulars of the exchange profits are shown in detail in the inclosures of V of the assets in the balance (Blank LII).

VI. There occur frequently special payments agreed upon by contract, for instance, commissions, gratuities, rebates, contributions to expenses of administration, etc., as a return to reinsurants, besides the supplements to the premium reserve, as per section 58 of the private insurance law, and the shares in the cases of insurances occurred, and the return of part of the premium reserves for insurances dissolved before maturity, reinsured before this law having come into force. If such allowances are made, they are not to be deducted from the expenses of administration, but are to be separately shown under figure 4 and more fully illustrated in the explanations.

VII. Here those receipts are to be enumerated which have not been mentioned in Sections I to VI; especially all unexpected receipts are to be mentioned here. They are to be more fully explained in the annual report.

B.—EXPENSES.

I. Here those payments are to be enumerated which are to be paid out of the reserve, as per I, figure 4, and payments under policies closed by the company itself:

1. For insurances maturing during the preceding years and settled by payment during the business year.

2. For insurances matured during the preceding years, but not settled yet by payment and again put back at the end of the business year and which consequently had to be repeatedly transferred to the reserve of insurance claims pending.

II. Only payments of insurances closed by the company itself come into consideration, and only those made in that business year for which the annual report is drawn up. Under "*a*" those amounts are to be enumerated which have already been paid out in the course of the year; under "*b*," those not paid yet in the business year and which have to be shown as put by as reserve at the end of the year (I, figure 4, of Receipts).

Figure 3*b* includes also such annuity amounts whose payment has been authorized, but which for some reason had not been cashed at the end of the business year.

III. Corresponding to VI of the Receipts, amounts to be paid as allowance for insurances closed by way of reinsurance are to be enumerated as expenses. The amounts which, according to III, figure 2*b*, have to be enumerated as put by, are transferred to the reserves for pending insurances (see I, figure 4, of Receipts).

IV. Here all cases of insurances closed by the company itself are to be considered, where insurants on surrender of their policies before maturity have a claim to, and been paid, an allowance, be it a portion of the premium reserve or of the gross premium, respectively, as stipulated in the insurance conditions. The amounts not paid yet are to be put by as reserve under XIII of Expenses (see note of I, figure 6*d*, of Receipts).

V. Under 1, those amounts are to be enumerated which were ready to be paid in the preceding year but were not paid, and

(*a*) Were later on paid to the respective recipients, or

(*b*) Have again not been collected.

Under 2, those amounts are to be stated which were ready for payment during the business year from transfers of the preceding year or the profit reserves.

VI. The premiums here enumerated for insurances covered by reinsurance must also show the allowances which, as per contract, are to be paid to the reinsurer or which are at once to be deducted from the premiums.

The specification according to kinds of insurances is provided for because there are reinsurance contracts, which stipulate for a participation of the reinsuring company in the total business of the company taking out the reinsurance.

VII and VIII. Agency commissions or other allowances to agents (gratuities, etc.) from contracts with associations, societies, etc., are to be kept separate as regards first year's (closing commission) and continuous (renewal) commissions, and to be inserted for the whole business, without deducting the commissions and shares in the administration expenses, payable as per contract by the reinsurants (see notes of VI4 of Receipts).

As to explanations of other expenses of administration, refer to inclosure (Blank L7) in which detailed particulars are to be given as to amounts written off.

IX. Also here keep separate losses on rates of exchange and losses on sale of real estate, etc. For particulars, see note of V of Receipts.

X. Just the same as with II of the Receipts and II of the Expenses, a separation of the premium reserve, according to the chief kinds of insurance, is to be made. A more detailed separation is given in the inclosure (Blank L3).

The company's own premium reserves are to be enumerated. According to section 58 of the private insurance law, the premium reserve on reinsurances is to be calculated by the reinsuring company, and to be kept and administered by same. Therefore, there are to be here enumerated the premium reserves of all insurances closed before this law coming into force, having regard to the reinsurance contracts in force. For insurances closed after this law had come into force, the premium reserves for all insurance closed by the company itself, including the amounts covered by reinsurance, are to be inserted here; for the insurances, however, undertaken as reinsurance, the premium reserves are to be enumerated under III of Expenses, so far as they are to be given up.

XI. The premium transfers (see I, figure 3, of Receipts) remain with the reinsuring company, so far as they belong to insurances undertaken as reinsurance. For the latter a separate line is provided under "*b*."

XII. The profit reserve to be put back at the end of the business year is found by deducting from the profit reserve of the preceding year the amounts authorized to be paid during the business year and adding the transfer from the surplus of the preceding year.

The several plans of distributing the profits and the fluctuations of the profit reserves are to be shown in the inclosures L5*a* and L5*b*.

If the transferred profit is to be accumulated for more than five years, and if the distribution of the profit does not take place until expiration of this time, the fluctuation of the profit fund of each profit plan is to be separately shown on inclosure L5*a*, according to the number of years of accumulation.

If, however, the insurances are divided into groups with the same period of profit accumulation, then all those insurances belonging to one and the same group, with equal period of profit accumulation, are to be separated in the accounts as a separate institution, and separate particulars, as per inclosure L5*b*, are to be given for each separate group.

XIII. See notes of L6 of Receipts.

XIV. Here are to be enumerated all those expenses which have found no mention in the sections I–XIII. An explanation of same is to be given in the annual report.

C.—CLOSING OF ACCOUNT.

For the sake of clearness it is advisable to repeat here the total receipts and the total expenses, and to state the profit or loss resulting therefrom.

D.—APPLICATION OF SURPLUS.

So far as the purpose of application is not discernible from the statement itself, explanations are to be given in the annual report.

II.—*Instructions for drawing up the balance.*

A.—ASSETS.

I. As "bills of the guaranties" are to be inserted, with insurance associations on mutual principles, those bills deposited in place of cash payment, by the signers of the guaranty fund, as per section 22, 2, of the private insurance law.

II. According to section 54, etc., the companies may acquire real estate for the security of registered debt claims, as well as for business purposes.

A separate inclosure (Blank L8) is to illustrate the real estate in detail. Any sales of real estate during the business year expired are to be shown in the illustration.

III. Mortgages, so far as they are suitable for investments of the premium reserve, as per section 59, etc., are to be separately entered into the prescribed register (section 57, 3, etc.). For the other mortgages there is required, as an inclosure to the balance sheet, a statement separated only according to the rates of interest (Blank L9).

IV. Also here a statement as an inclosure to the balance is sufficient, making a division according to kind and amount of interest rates.

V. A special statement (Blank L11) has to be made of the stocks, according to kind and rate of interest, and the fluctuation of the amount of stock during the expired business year is to be shown. In the balance sheet itself, the stock need be enumerated only according to large groups, as per section 59 of the private insurance law. For the insertion of the value of stocks in the balance, see the requirements of section 261, 1, of the commercial code. The statement must contain at the same time the rate of exchange and any profits or losses on the exchange.

VI. Payments in advance and loans on the company's own policies (loan on policies) are to be shown in a lump sum in the balance; there must be added to the explanations a statement separated as to the rates of interest.

VII. Particulars are to be given in the explanation as to the amount of bills negotiable according to the regulations of the Imperial Bank. The same applies—

VIII. To the credit balance with banking firms (1), and with "other insurance companies" (2). From this statement it must appear whether and up to what amounts the several banking firms, etc., participate in the credit balance, and for what purpose the balances are intended.

IX. The principles for calculating and inserting the deferred premium are to be stated in the explanation. The amounts added to premium payable in rates, on account of loss of interest and increase in cost of administration caused thereby, must not be included.

The increase or decrease incurred during the business year in deferred premiums is to be inserted under II of Receipts in the profit and loss account.

X. There are to be inserted as interests and rents overdue those amounts which are not paid until the following business year, but which are due in the accounts during the expired business year (for instance, the interest on stocks, with semiannual payment of interest on April 1 and October 1 for the time from October 1 until December 31 of the business year), as well as the interests and rents overdue but not yet paid by careless debtors. The amounts of both kinds of outstandings are to be separately given in the explanations, and, if necessary, to be explained.

XI. The separation between amounts from the current business outstanding with general agents or agents and those outstandings of previous years must be such that a control is possible if the collection or the writing off, respectively, of old outstanding amounts is properly regulated.

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XIV. Loans of guaranty to insured employees are to be inserted in one lump sum; in the explanations, particulars are to be given as to the rate of interest charged.

XV. There belong to this, among other items, the costs of starting a newly established insurance company, which must be amortizated within the first five business years according to section 36, 1, No. 3, etc., so far as this amortization has not yet taken place. Further particulars in reference to this are to be given in the explanation of the annual report. There are also to be mentioned those premiums, overdue, the payment of which has been deferred by the company to a later period on application of the insured.

XVI. It is to be mentioned in the annual report in what way the covering of any loss is provided for in the statutes.

B.—LIABILITIES.

I. The fund of foundation according to section 22, etc., is to be considered as guaranty capital with insurance associations on mutual principles.

II. In place of the reserve fund to be accumulated by stock companies, as per section 262 of the commercial code, up to 10 per cent of the stock capital, there is with insurance associations on mutual principles a separate reserve fund, to be arranged for the purpose of covering exceptional losses, according to section 37 of the private insurance law, as to the formation of which the statutes must contain provisions. The increase as compared to the previous year is to be separately stated.

III. Here the premium reserve as shown under X of the Expenses of the profit and loss account is to be inserted. In how far the premium reserve on insurances covered by reinsurance before this law coming into force is to be included depends upon the reinsurance contracts referring to these insurances.

In the explanations to be handed to the imperial office of supervision, particulars are to be given every year to what extent any deductions of the premium reserve in the manner of Zillmer or any similar method are being made. The amount of the deductions made must appear from inclosure L3.

IV to VII. Compare the instructions in the corresponding paragraphs of the receipts and expenses of the profit and loss account.

VIII. In the explanations of the annual report, there must be stated the character of the credit balance of other insurance companies.

IX. Here all amounts are to be stated which are deposited in cash as guaranties of agents and employees of the company.

X. Here those amounts are to be inserted which have not been mentioned in any other part. In the explanations of the annual report particulars as to this must be given.

XI. The distribution of any surplus is regulated as per D of the profit and loss account.

LI.—PROFIT AND LOSS ACCOUNT FOR THE BUSINESS YEAR 19—, OF ———.

Subject-matter.	Amount.	
	Separately.	Total.
A.—*Receipts.*		
I.—Transfers from the preceding year:	*Marks.*	*Marks.*
1. Amount carried forward from the surplus		
2. Premium reserves		
3. Premium transfers		
4. Reserve for pending insurance claims		
5. Profit reserve of the insured		
Increase from the surplus of the preceding year		
6. Other reserves and amounts put by		
Increase from the surplus of the preceding year		
II.—Premium on:		
1. Whole-life insurances—		
(*a*) Closed by the company		
(*b*) Taken over as reinsurance		
2. Endowment insurance—		
(*a*) Closed by the company		
(*b*) Taken over as reinsurance		
3. Annuities—		
(*a*) Closed by the company		
(*b*) Taken over as reinsurance		
4. Other insurances—		
(*a*) Closed by the company		
(*b*) Taken over as reinsurance		
III.—Policy fees		
IV.—Returns on capital:		
1. Interest on invested moneys		
2. Interest on moneys temporarily lent out		
3. Rents		
V.—Profit on investments:		
1. Profit on exchange		
2. Other profits		
VI.—Return of reinsurance for:		
1. Supplement to premium reserve, as per section 8, private insurance law		
2. Insurance claim occurred		
3. Insurances prematurely dissolved		
4. Other payments as per contract agreement		
VII.—Other receipts		
Total receipts		
B.—*Expenses.*		
I.—Payments of pending insurance cases of the preceding year arisen from policies closed by the company itself:		
1. Settled by payment		
2. Deferred		
II.—Payment of insurance claims arisen during the business year on policies closed by the company itself:		
1. Whole-life insurances—		
(*a*) Settled by payment		
(*b*) Payment deferred		
2. Endowment insurances—		
(*a*) Settled by payment		
(*b*) Payment deferred		
3. Annuities—		
(*a*) Settled by payment (collected)		
(*b*) Deferred (not collected)		
4. Other insurances—		
(*a*) Settled by payment		
(*b*) Payment deferred		

LI.—PROFIT AND LOSS ACCOUNT, ETC.—continued.

Subject-matter.	Amount.	
	Separately.	Total.
B.—*Expenses*—Continued.		
III.—Allowances on insurance taken in reinsurance:		
1. Supplement to premium reserve, as per section 58, private insurance law	*Marks.*	*Marks.*
2. Claims of insurance occurred—		
(*a*) Paid		
(*b*) Deferred		
3. Insurances prematurely dissolved		
4. Other payments, as per contract agreement		
IV.—Payments on the company's own prematurely dissolved insurances (surrenders)		
V.—Profit shares to insured:		
1. From the preceding years—		
(*a*) Cashed		
(*b*) Not collected		
2. From the business year—		
(*a*) Cashed		
(*b*) Not collected		
VI.—Reinsurance premium:		
1. Whole-life insurance		
2. Endowment insurance		
3. Annuities		
4. Other insurances		
VII.—Taxes and expenses of administration (deducting the payments agreed upon, as per contract for insurances undertaken in reinsurance):		
1. Taxes		
2. Expenses of administration—		
(*a*) First year's commission		
(*b*) Renewal commission		
(*c*) Other expenses of administration		
VIII.—Amounts written off		
IX.—Loss on investments:		
1. Loss on exchange		
2. Other losses		
X.—Premium reserves at the end of the business year for:		
1. Whole-life insurances		
2. Endowment insurances		
3. Annuities		
4. Other insurances		
XI.—Premium transfers:		
1. Whole-life insurances—		
(*a*) Closed by the company itself		
(*b*) Taken as reinsurance		
2. Endowment insurances—		
(*a*) Closed by the company itself		
(*b*) Taken as reinsurance		
3. Annuities—		
(*a*) Closed by the company itself		
(*b*) Taken as reinsurance		
4. Other insurances—		
(*a*) Closed by the company itself		
(*b*) Taken as reinsurance		
XII.—Profit reserve of the insured		
XIII.—Other reserves and amounts put by		
XIV.—Other expenses		
Total expenses		

L1.—PROFIT AND LOSS ACCOUNT, ETC.—continued.

Subject-matter.	Amount.	
	Separately.	Total.
C.—*Closing of accounts.*	*Marks.*	*Marks.*
Total receipts		
Total expenses		
Surplus of—		
Receipts		
Expenses		
D.—*Application of surplus.*		
I.—To the reserve fund (section 37 of the private insurance law; section 262 of commercial code)		
II.—To other reserves		
III.—To shareholders and guarantors		
IV.—Bonuses to:		
1. The board of supervision		
2. The board of administration		
3. The head managers		
4. Other parties		
V.—Profit shares of the insured, viz:		
1. Paid in cash		
2. Added to the profit reserve		
VI.—Other applications		
VII.—Transfers to new account		
Total		

L2.—BALANCE AT THE CLOSE OF THE BUSINESS YEAR 19—, OF ———.

Subject-matter.	Amount.	
	Separately.	Total.
A.—*Assets.*	*Marks.*	*Marks.*
I.—Bills of shareholders or guarantors		
II.—Real estate		
III.—Mortgages		
IV.—Loan on stock		
V.—Stock:		
1. Pupillary stock		
2. Stock as per section 59, figure 1, paragraph 2, private insurance law—		
(*a*) Admitted for pupillary investments, according to the laws of the respective countries		
(*b*) Debentures of German mortgage companies		
3. Other stock		
VI.—Payments in advance and loans on policies		
VII.—Bills admissible according to requirements of the Imperial Bank		
VIII.—Credit balances:		
1. With banking firms		
2. With other insurance companies		
IX.—Deferred premiums		
X.—Overdue interests and rents		
XI.—Amounts outstanding with general agent or agents, respectively:		
1. From the business year		
2. From previous years		
XII.—Amounts of cash in hand		

L2.—BALANCE AT THE CLOSE OF THE BUSINESS YEAR, ETC.—continued.

Subject-matter.	Amount.	
	Separately.	Total.
A.—*Assets*—Continued.	*Marks.*	*Marks.*
XIII.—Inventory and printed matters...	....	....
XIV.—Guaranty loans to insured employees...	....	....
XV—Other assets...	....	....
XVI.—Loss...	....	....
Total...	....	....
B.—*Liabilities.*		
I.—Stock or guaranty capital...	....	....
II.—Reserve fund (section 37, private insurance law; section 262, commercial code):		
1. Amount at the end of the preceding year...	....	....
2. Increase during the business year...	....	....
III.—Premium reserves for:		
1. Whole-life insurances...	....	....
2. Endowment insurances...	....	....
3. Annuity insurances...	....	....
4. Other insurances...	....	....
IV.—Premium transfers for:		
1. Whole-life insurances...	....	....
2. Endowment insurances...	....	....
3. Annuity insurances...	....	....
4. Other insurances...	....	....
V.—Reserve for insurance claims pending:		
1. To be kept with the premium reserves...	....	....
2. Other amounts...	....	....
VI.—Profit reserve of those insured with share in the profit...	....	....
VII.—Other reserves, viz:		
1. Whole-life insurances...	....	....
2. Endowment insurances...	....	....
3. Annuity insurances...	....	....
4. Other insurances...	....	....
VIII.—Credit balances of other insurance companies...	....	....
IX.—Guaranties in cash...	....	....
X.—Other liabilities, viz:		
1. Whole-life insurances...	....	....
2. Endowment insurances...	....	....
3. Annuity insurances...	....	....
4. Other insurances...	....	....
XI.—Profit...	....	....
Total...	....	....

L3.—INSURANCE IN FORCE AT THE END OF THE BUSINESS YEAR 19—, OF ———, ACCORDING TO KINDS OF INSURANCE.

Closed by the company / *Taken by reinsurance* *insurances* *with* / *without* *a share in the profits for insured.*

[Note.—Blank L3 is to be separately written out for insurances with and without profit, as well as those closed by the company and undertaken as reinsurances. Those insurances are considered subdivisions of insurance kinds for which separate divisions are made in the books kept for that purpose; when calculating the premium reserves, insurances are to be inserted in these subdivisions only if the premium reserves are calculated for same by the company itself and kept and administered by same. The amounts, belonging to reinsurances, on which the premium reserve is not kept by the company are to be stated for each kind of insurance and mentioned in the blank at the end in one amount.]

Kind of insurance.	Number of policies.	Insured amount.	Annuity.	Annual net premium.	Premium reserve.	Premiums transferred.	If applying Zillmer's or a similar method, the premium reserve in column 6 is below the one not curtailed by—	Notes.
1.	2.	3.	4.	5.	6.	7.	8.	9.
A.—Whole-life insurances, including insurances with a fixed period of maturity:		*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	
Total								
Besides that, there are reinsured with the premium reserve not kept by the company:								
Together								
B.—Endowment insurance, including capital-saving insurances:								
Total								
Besides that, there are reinsured with the premium reserve not kept by the company:								
Together								

C.—Annuities:								
Total								
Besides that, there are reinsured with the premium reserve not kept by the company:								
Together								
D.—Other insurances:								
I.—Insurance in case of invalidity (including the additional insurances of invalidity)—								
Total								
Besides that, there are reinsured with the premium reserve not kept by the company:								
Together								
II.—Insurance against illness—								
Total								
Besides that, there are reinsured with the premium reserve not kept by the company:								
Together								
Premiums for war risks								
Extra premiums								

L4.—DISTRIBUTION OF THE PREMIUM RECEIPTS AND INSURANCE OBLIGATIONS IN THE BUSINESS YEAR 19—, OF ———, ACCORDING TO KINDS OF INSURANCES.

Insurances with / without participation of the insured in the profits.

[NOTE.—The Blank L4 is to be executed separately for insurances with or without participation of the insured in the profit. Those insurances are considered subdivisions of insurance kinds for which separate divisions are made in the books kept for that purpose when calculating the premium reserves.]

Referring to II and VI of the Receipts.

Kinds of insurance.	Receipts from—					Notes.
	Premiums on—		Allowance of—			
	Insurances closed by the company.	Insurances undertaken as reinsurances.	Supplement of the premium reserve.	Insurance claims occurred.	Prematurely matured insurance.	
1.	2.	3.	4.	5.	6.	7.
A.—Whole-life insurances (including insurance with a fixed period of maturity):	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	
Together						
B.—Endowment insurance (inclusive of capital savings insurance):						
Together						
C.—Annuities:						
Together						
D.—Other insurances:						
I.—Invalidity—						
II.—Sickness –						
Together						
Premiums for war risk						
Extra premiums						

14.—DISTRIBUTION OF THE PREMIUM RECEIPTS AND INSURANCE OBLIGATIONS, ETC.—continued.

Referring to I to IV and VI of the Expenses.

Kinds of insurance.	Expenses for–								Notes.
	Reinsurance premiums.	Insurances closed by the company for insurance claims—			Reinsurance for supplement of the premium reserve.	Reinsurance for insurance claims matured.		Reinsurance for insurances prematurely surrendered.	
		Paid.	Deferred.	Prematurely dissolved.		Paid.	Deferred.		
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
A.—Whole-life insurances (including insurance with a fixed period of maturity):	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*	
Together									
B.—Endowment insurance (inclusive of capital savings insurance):									
Together									
C.—Annuities:									
Together									
D.—Other insurances: I.—Invalidity—									
II.—Sickness—									
Together									
Premiums for war risk									
Extra premiums									

L5a.—DISTRIBUTION OF PROFITS AND FLUCTUATION OF THE PROFIT RESERVES IN THE BUSINESS YEAR 19—, OF———.

V and XII of Expenses.

Subject-matter.	The distribution of profits is based on—								
	Proportion of an annual premium.	Proportion of the total of all annual premiums.	Proportion of the premium reserve.	Other plans, stating which.					
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Number of the policy participating									
2. Insured amounts									
3. Annual premiums, premium reserves, etc., participating in the profit									
4. Amount of profit placed aside for being paid during the business year									
5. Profit ratio on the basis of distribution, as per 3, for each 100 marks									
6. Fluctuation in the profit reserves:									
(a) Amount at the end of the preceding year									
(b) Transfer from the surplus of the preceding year									
(c) Credit entries of interest									
(d) Total									
(e) Placed aside for being paid during the business year (of which not yet cashed)									
(f) Position at the end of the business year									
7. Conditions of payment									

1.5*b*.—GROUP OF POLICIES, WITH ——— YEARS' ACCUMULATION OF PROFIT, ISSUED IN THE YEAR ——— BY THE ———.

Statement for the business year 19—.

A.—Annual showing for the accumulation period up to the year of distribution:
1. Insured amounts at the beginning of the business year........
2. Insured amounts at the end of the business year.................
3. Fluctuation of the profit fund—
    - (*a*) Amount at the end of the preceding year.................
    - (*b*) Transfer from the surplus of the preceding year......
    - (*c*) Credit entries of interest...
    - (*d*) Total, "*a*" to "*c*"...
    - (*e*) Payments during the business year*.......................
    - (*f*) Position at the end of the business year.................

B.—Showing for the year of distribution:
1. Amount of insurance in force at the time of distribution......
2. Total receipt of premiums until the time of distribution......
3. Total receipt of interest until the time of distribution.........
4. Total payments for insurance claims occurred...................
5. Total expenditure for expenses of administration and commissions..
6. Total expenditure for surrenders...
7. Profit fund in hand for distribution....................................
8. Total amount of premiums upon which this fund was to be distributed...

1.6.—STATEMENT OF THE OTHER RESERVE FUNDS AND AMOUNTS PUT BY ——— IN THE BUSINESS YEAR 19—, OF ———.

XIII of Expenses.

Designation.	Amount at the end of the preceding year.	Increase during the business year.		Decrease during the business year.	Amount at the end of the business year.
		From surplus of the preceding year.	From interest.		
1.	2.	3.	4.	5.	6.
	Marks.	*Marks.*	*Marks.*	*Marks.*	*Marks.*

1.7.—STATEMENT OF THE COST OF ADMINISTRATION AND AMOUNTS WRITTEN OFF IN THE BUSINESS YEAR ———.

VII and VIII of Expenses.

I.—Expenses of administration:
1. Salaries and remuneration—
    - (*a*) Of employees in the office of the head administration..
    - (*b*) Of employees in the branch offices...........................
2. Traveling expenses—
    - (*a*) Of employees in the office of the head administration..
    - (*b*) Of employees in the branch offices...........................

---

* This refers to payments from the profit fund, made on occasion of surrenders or death claims.

I.—Expenses of administration—Continued.

3. General office expenses—
   - (*a*) Outlays for business localities (rents, including the rental value of the rooms occupied by the company—its own building, cleaning, heating, lighting, etc.)—
     - Of the head office...
     - Of the branch offices.....................................
   - (*b*) For office and cash office requirements (printed matters for the internal service, writing utensils, bookbinders' and porters' remunerations, office books)—
     - Of the head office...
     - Of the branch offices.....................................

4. Printing expenses for publications, advertisements, canvassing, pamphlets, etc...
5. Postage..
6. Medical fees...
7. Expenses of lawsuits...
8. Expenses re investments of capital...............................
9. Other expenses...

Together..

II.—Amounts written off (to be enumerated separately)........................

L8.—STATEMENT OF THE REAL ESTATE OF ——— AT THE END OF THE BUSINESS YEAR 19—.

II of the assets in the balance.

Designation of the real estate.	Value in the balance.	Value of the real estate and basis for its valuation.	Any indebtedness by mortgage, stating the rate of interest.	Description of the real estate (state here what purpose the real estate serves, especially whether and in how far it contains business localities of the companies).
1.	2.	3.	4.	5.
	Marks.			

L9.—STATEMENT OF MORTGAGES OF ——— AT THE END OF THE BUSINESS YEAR.

III of the assets in the balance.

[Blank L9 is to be filled in separately for loans on city and agricultural real estate. Only those mortgages are to be enumerated which do not belong to the premium reserve fund. For the first year of making this report all such mortgages are to be inserted; in the following report years, only the changes which have taken place in the increase or decrease are to be separately reported. For mortgages given as security, the blank is to be separately filled in, and in column 5 the reason for giving them as security is to be stated.]

Rate of interest.	Amounts loaned out at rate of interest stated in column 1.	Value of the real estate, given a loan on account to the taxation on which the loan is based.	Annual receipt of interest.	Notes.
Per cent.	*Marks.*	*Marks.*	*Marks.*	

LIO.—STATEMENT OF LOANS GRANTED ON STOCK AT THE END OF THE BUSINESS YEAR 19—.

IV of the assets in the balance.

Stock granted loans upon, arranged according to kind and interest ratio.				Loans.		
Exact designation.	Nominal rate.	Quotation at end of business year.	Rate of interest.	Amount.	Rate of interest.	Annual return of interest.
1.	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**
	Marks.		*Per cent.*	*Marks.*	*Per cent.*	*Marks.*

LII.—STATEMENT AS TO FLUCTUATION OF STOCKS OF ——— IN THE BUSINESS YEAR OF 19—.

V of the assets in the balance.

Exact designation of the stock, according to kind and rate of the interest.	Nominal value.	Rate of interest.	Return of interest annually.	Purchase quotation.	Value, amount.	Sales in the course of the business year.		
						Nominal value.	Selling price.	
							Quotation.	Amount.
1.	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**
	Marks.	*Per cent.*	*Marks.*		*Marks.*	*Marks.*		*Marks.*

Value in the balance at the end of the preceding year.		Quotation value at the end of the business year.		Quotation.	
Quotation.	Amount.	Quotation.	Amount.	Profit.	Loss.
10.	**11.**	**12.**	**13.**	**14.**	**15.**
	Marks.		*Marks.*	*Marks.*	*Marks.*

L12.—FLUCTUATION OF THE INSURANCE IN FORCE IN THE BUSINESS YEAR 19—, OF THE ——.

Description.	Whole-life insurances.		Endowment insurances.		Annuities.		Other insurances.						
							In case of invalidity.				In case of sickness.		
	Policies.	Amount.*	Policies.	Amount.*	Policies.	Annuities.*	Policies.	Amount.*	Policies.	Annuities.*	Policies.	Relief per day.*	Amount paid on death.*
	1.		2.		3.		4.		5.		6.		
Reinsurance applications, including the pending applications of the preceding year:		Marks.		Marks.		Marks.		Marks.		Marks.		Marks.	Marks.
Of which there were refused or placed back													
Of which there were closed													
Of which there were covered by reinsurance													
Reinforcement of lapsed policies													
Increase in amount of existing policies													
Increase of the insured amounts by dividends													
Total increase													
Insurances in force at the end of the preceding year													
Together													
Besides taken as reinsurance													
Total													
Of which covered by reinsurance													
Decrease of insurances closed by the company itself:													
By death													
By expiration													
By surrender													
By lapse, abandonment													

* On Blank L12 the "pfennigs" are to be omitted and the figures to be given in correspondingly round numbers.

By reduction, including change into a paid-up policy, etc.													
By transfer in consequence of change in the insurance plan													
By not taking up of policy													
Total													
Besides decrease in insurance taken as reinsurance													
Total decrease													
Of which covered by reinsurance													
Insurance in force at the end of the year													
Of which covered by reinsurance													

L13.—STATEMENT AS TO THE COURSE OF MORTALITY FOR CAPITAL / ANNUITY INSURANCES WITH THE ———.

[Blank L13 is to be made out (1) for whole-life insurances, (2) for endowment insurances, (3) for annuity insurances. If there are different tables of mortality in use for insurances of one and the same kind of insurance, separate statements must be made of the insurances coming into question for each table of mortality.]

Year of birth.	Insured persons—		Insured amounts—		Risks for one year,* persons insured, amount or annuity.	Expected decrease by persons insured, amount or annuity.	Decrease by mortality actually experienced, persons insured, amounts or annuities.	Difference between the expected and actual decrease by mortality of—				Notes.
								Persons.		Insured amount or annuities.		
	At beginning of business year.	At end of business year.	At beginning of business year.	At end of business year.				More than was to be expected according to the tables.	Less than was to be expected according to the tables.	More than was to be expected according to the tables.	Less than was to be expected according to the tables.	
1.	2.	3.	4.	5.	6.	7.	8.	9.				10
1810 or before.			*Marks.*	*Marks.*	*Marks.*	*Marks.*	*Marks.*					

* Method of calculating same is to be given.

WIRELESS TELEGRAPHY IN GERMANY.

My report to the Department on the Slaby-Arco system of wireless telegraphy* has brought so many letters of inquiry to this office from all parts of the United States, that I feel called upon to treat the subject in all its details.

The Allgemeine Elektricitäts Gesellschaft, in Berlin, manufactures two types of apparatus to correspond with different requirements. The first type is intended for standard stations, ships, and permanent installations, and is in three different constructions, namely: For small distances up to 25 miles, for medium distances up to 50 miles, and for long distances of over 50 miles over sea. The second type consists of a light, portable field instrument with a microphone receiver.

TRANSMITTER OF TYPE I† FOR LOW-TENSION CIRCUITS.

The component parts of this apparatus comprise the following:

I. *Inductor.*—The inductors employed for apparatus of Type I are different, according to the signaling distance. For small distances of 25 miles, an inductor having a spark gap of about 6 inches is used, which is placed in an inclosed wooden box and provided with an ordinary hammer interrupter. The current is supplied by a battery of from 20 to 40 dry cells, having a tension of about 16 volts. The consumption of energy is from 50 to 100 watts.

For medium distances up to 50 miles, an inductor (fig. 2) is used, with a spark gap which is supplied direct with alternating current or with continuous current taken from a turbine interrupter.

For long distances over 50 miles, the inductors have an output of 3 kilovolt amperes or more, and are supplied with either alternating current direct or with continuous current converted by a Grisson direct current-alternating current converter.

II. *Primary condenser.*—The condenser is connected in parallel with the interrupter and is placed in a wooden box. It is usually stored in a convenient place—as a rule, in the neighborhood of the interrupter.

III. *Mercury turbine interrupter.*—This consists of a mercury turbine which is driven by an electric motor. The speed of this motor can be varied between 200 and 1,000 revolutions. The shaft of the turbine is arranged vertically, and dips at its lower end into a cast-iron vessel filled with 3 kilograms (6.6 pounds) of mercury. The turbine shaft has a small wing in its lower end which dips in the

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* See ADVANCE SHEETS No. 1309, CONSULAR REPORTS No. 261.

† See fig. 1 on p. 291.

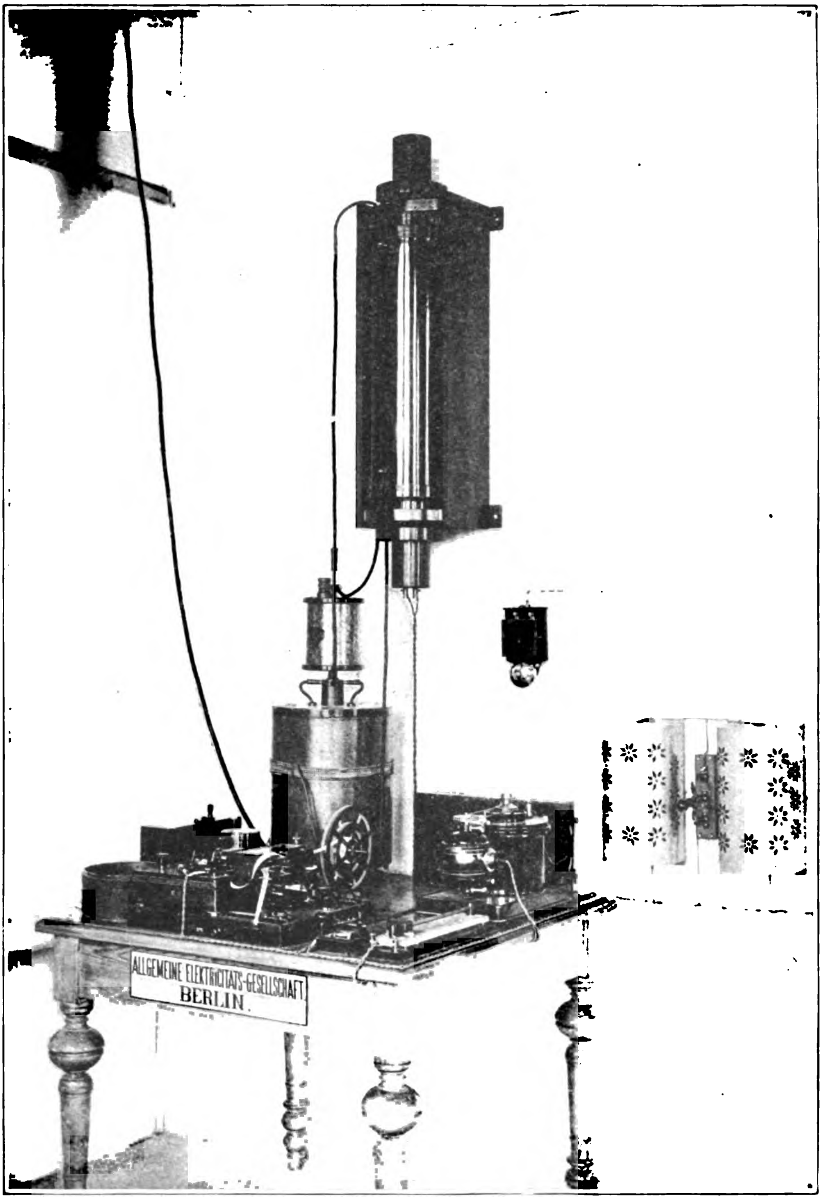

FIG. 1.—COMPLETE OUTFIT, TYPE I.

mercury, and by its rapid rotation draws the mercury up and spurts it through an opening in a horizontal plane. A metal segment ring is placed concentrically to the shaft of the turbine. The rotating stream of quicksilver strikes against this ring during a part of every revolution. As the quicksilver is connected with one pole and the current supply and the segment with the other, the current circuit is continually opened and closed.

In order to quickly extinguish the sparks caused by opening the circuit, the turbine casing is filled with alcohol. The length of the segment depends upon the extension it has—for example, with 110 volts, a length of 1 quadrant; with 65 volts, a length of 2 quadrants; and with 32 volts, 3 quadrants. The mean intensity of the primary current is, with 65 volts, about 15 amperes, with 20 interruptions.

For ship installations, the interrupte ris provided with a trunnion suspension (fig. 3) to keep it always in the same horizontal plane, which is made in different forms to suit prevailing conditions.

IV. *The Grisson converter.*—As a substitute for turbine interrupters, and in order to avoid trouble with the mercury, the Grisson direct current-alternating current converter is supplied for large electrical outputs. This converter (Grisson's patent) is used as a substitute for the direct-current interrupter. The primary winding of the inductor has, in addition to its two main terminals, a third terminal, which is connected to the metal of the winding coil. The method of operation is then as follows:

A direct current is sent into the inductive coil and is kept on until it attains a maximum value. When this is reached, the current is passed through the circuit of the second coil. The two coils have a common iron core, which they magnetize in an opposite sense, so that when the current is sent through the circuit, a counter electromotive force is induced in the first circuit, reducing the current flowing in it nearly to zero. At this moment, the first circuit is interrupted and the current immediately rises to its maximum value. In order to perform this automatic closing of the one or the other circuit, or to effect both operations simultaneously, a contact device in the form of a commuter is provided. The device consists of two commutators insulated from one another and mounted upon a common shaft, and fitted on the one hand with two collector rings and on the other hand with a common brush, which makes contact alternately with the segments or connects them with one another.

This contact device is driven in by a small electric motor. The converter does not deliver a pulsating direct current, but a pure alternating current, whose wave form can be varied within wide limits. The frequency can easily be varied between 15 and 100 cycles per second. As the current is not interrupted when it is at its maximum

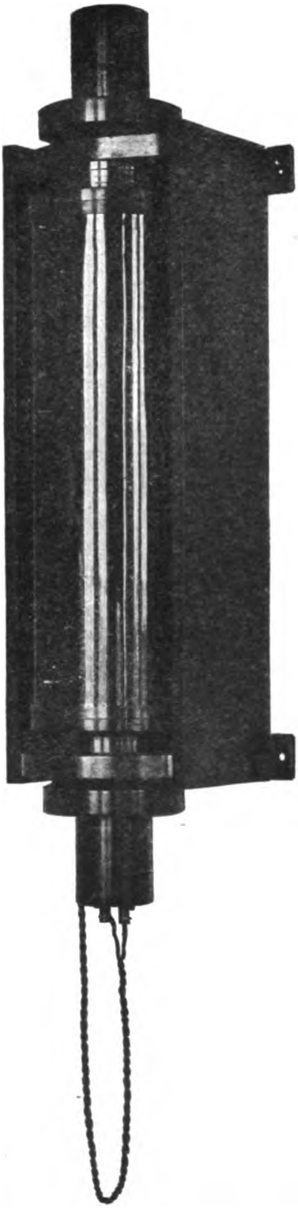

FIG. 2.—INDUCTOR FOR MEDIUM DISTANCES.

value, and little, if any, sparking occurs, it is possible with the help of this converter to feed the inductor with considerable current.

V. *The Morse instrument.*—It has been found that the platinum contacts of the Morse instrument have either burnt or fused together when interrupting heavy currents, and thereby caused unpleasant disturbances in the working. All these troubles have been overcome by the patent Morse instrument with magnetic spark blow-out (fig. 3), which is delivered in two different styles, either with magnetic or electro-magnetic blow-out. The latter is so constructed that it can be added to all normal instruments without trouble.

VI. *Three-step resistance regulator.*—This piece of apparatus is also intended for portable field equipments. It is placed in the inductor circuit and serves to weaken the intensity of the transmitter if it is ever desired to signal to short distances. A simple, single pole three-throw switch, lettered "maximum," "medium," "minimum," serves to show that there is in the primary circuit of the inductor at the moment of signaling either no resistance, or one resistance, or that there are two resistances, whereby the sparks produced by the tension in the secondary winding of the inductor are reduced to different degrees.

VII. *Lightning arrester.*—In order to protect the dynamo generating the current from lightning, a lightning arrester is provided.

TRANSMITTER FOR HIGH-TENSION CIRCUIT.

The apparatus belonging to this circuit includes the following:

I. *Electric jars.*—The battery consists of three, seven, or fourteen double Leyden jars (fig. 4). The case consists of a cylindrical containing box, between whose upper and lower covers the jars are held firmly by layers of felt. The containing box is built by layers of micanite. The jars are double, one being placed inside the other. The upper coverings are connected by a tin-foil coating at the bottom of the jars; their inner coatings are separately connected to a good insulating plate.

II. *Spark gaps.*—The spark gaps are vertically arranged on the collecting plate of the battery and fitted with micanite cylinders to deaden the sound. To ventilate the interior, an ebonite leading-out tube is provided. From both terminals of the spark gap rubber-insulated wires are led to the secondary terminals of the induction coil, which is arranged on the wall. The circuit is arranged with the upper adjustable pole of the spark gaps earthed, rendering it therefore harmless. The lower pole of the spark gap, which, if touched, might produce strong physiological effects, is distinguished by being painted red, and it is scarcely accessible, owing to its concealed position.

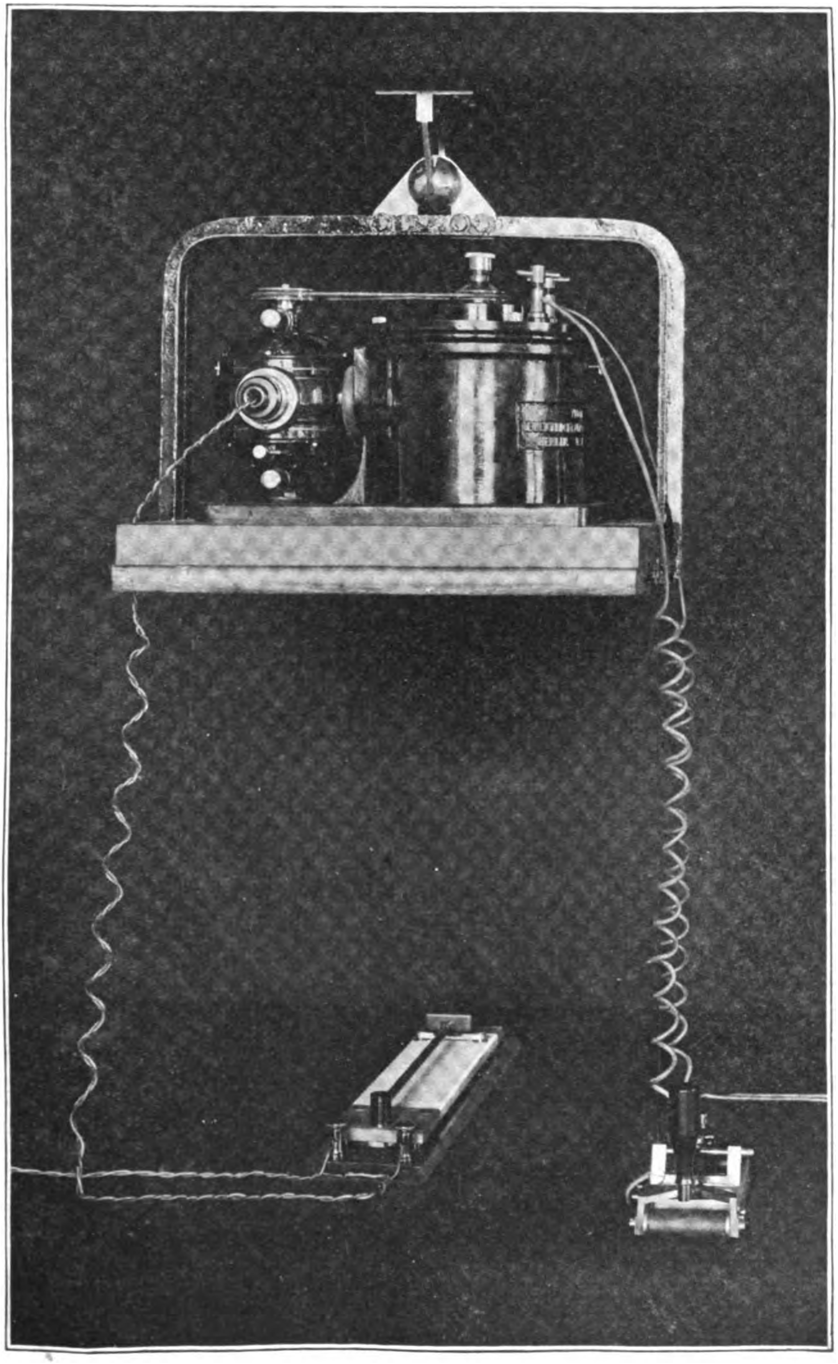

FIG. 3.—TURBINE INTERRUPTER WITH TRUNNION SUSPENSION.

III. *The transmitting wire.*—This consists of one or more rubber-insulated leads, the upper end of which is wound round into the form of a cylindrical cage.

IV. *Spark gap cut-out.*—This is arranged between the antenna and the outer system, and is attached to the case containing the battery of Leyden jars. It serves to automatically cut off the high-tension circuit of the transmitter from the receiver while taking messages.

V. *Exciter and syntonizing coils.*—The syntonizing coil consists of a few turns of wire arranged around the cylindrical box containing the battery.

VI. *Storm emergency switch.*—This is inserted between the antenna and the apparatus room, and is kept open during electrical storms.

THE RECEIVER.

The receiving apparatus is photographically represented in fig. 5. The receiver consists of two separate circuits, namely, a weak-current circuit and a heavy-current circuit.

The weak-current circuit consists of—

I. *The coherer.*—Only vacuum fritters are used—first, in order that the filings may be protected against oxidation and the influence of the air, and, second, that the powder may remain absolutely dry and easily movable. As a result, in each stroke of the tapper the grouping of the filings is similar. The plugs of the coherer are of silver, closely fitted into a glass tube, so that between the plug and the tube no fine powder can force its way in. The connections of the coherer consist of stout platinum wires, and lead to metal caps fastened on to the coherer ends.

The construction of the plugs is patented and permits the sensitiveness to be regulated in spite of the air-tightness of the connection. The end surfaces of the plugs are not parallel, but divergent, so that the slit presents a wedge-shaped appearance. If the fritter is placed with the smallest part of the slit downward, the powder fills up the greater part of this and the pressure is increased. The sensitiveness of the coherer is then at its maximum. If the widest part of the slit is placed below, and the powder is divided over a large surface, the pressure is reduced and the sensitiveness of the coherer is then at its minimum value.

The fritter can be turned round its axis. It is provided with a thumb screw and arresting spring, by which it may be given any desired degree of sensitiveness. With this new arrangement of tapper and coherer, it is possible also to alter the sensitiveness of the coherer while telegraphing, if so desired.

The coherers may be changed with the greatest ease by removing

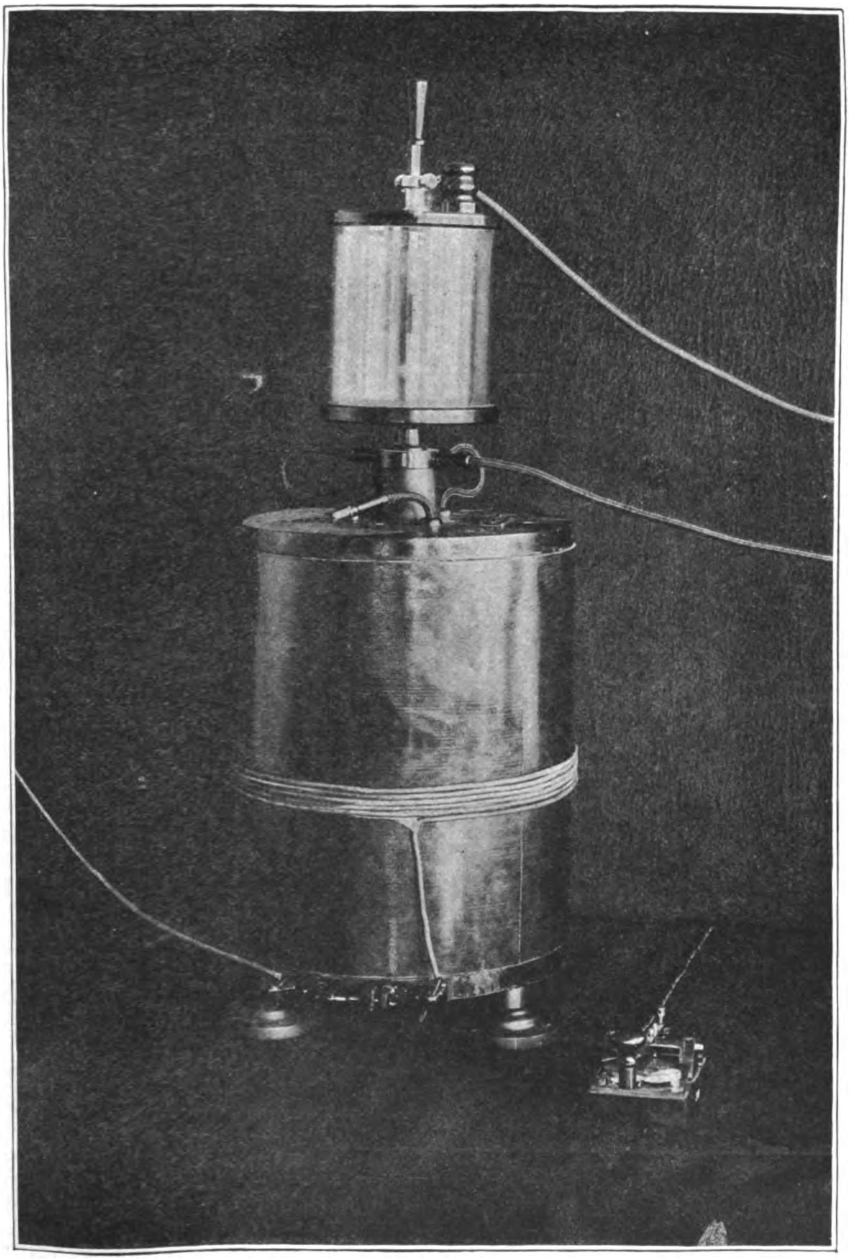

FIG. 4.—LEYDEN JAR WITH SPARK GAPS.

them from their metal sleeves. These coherers are manufactured in all degrees of sensitiveness.

II. *The interrupter.*—The interrupter spring is so switched in that by a movement of the tapper lever, the weak-current circuit is opened, and the tension from the cell is cut off from the coherer. The advantage accruing from this patented arrangement is an easier and more exact interruption, at the same time prolonging the duration of the coherer, because the sparking which would result in the fritter powder at the moment when the coherer was tapped is moved to the interrupting point.

III. *The coherer cell.*—The coherer cell is a dry element having a tension of 1.2 to 1.5 volts. With tensions greater than 1.5 volts, the coherer does not work with sufficient precision; with tensions under 1.2 volts, the sensitiveness of the relay is not sufficiently good.

IV. *Relay winding.*—The resistance of the coherer is reduced with normal intensity to about 2,000 ohms; the relay coil has, therefore, a similar resistance of about 2,000 ohms. The relay is polarized and works as follows: A permanent steel magnet magnetizes the two cores of the coils so that their pole pieces become of the same magnetic polarity. The permanent magnet also magnetizes a tongue of soft iron placed between the pole pieces in the opposite magnetic polarity. This tongue is kept in a definite position by means of two contacts—that is, one stationary and one working contact.

By varying the position of these two contacts, the tongue is brought into a state of unstaple equilibrium, so that it rests against the stationary contact when there is no current passing through the relay. If a weak current is now sent through the relay winding by the coherer cell, the initial magnetism of one of its cores is increased and that of the other weakened. By this means, the equilibrium of the tongue is disturbed, and it strikes against the working contact. The relay tongue is balanced in any position by means of a counterweight, so that the relay will work satisfactorily in any position up to the vertical.

V. *The condenser.*—The condenser is connected in parallel with the dry cell and with the relay winding. Its capacity is 0.01 microfarad and is, by comparison with that of the coherer, extremely large. It is constructed in the usual way, with sheets of tin foil insulated from one another by means of mica. The condenser absorbs any excess of tension which would be exerted on the coherer owing to the self-induction of the relay and facilitates the release of the coherer powder. The ground connection is connected by means of the condenser and coherer through an interrupter, thus avoiding the self-induction of the relay.

VI. *Resistance regulator.*—The resistance regulator serves to weaken

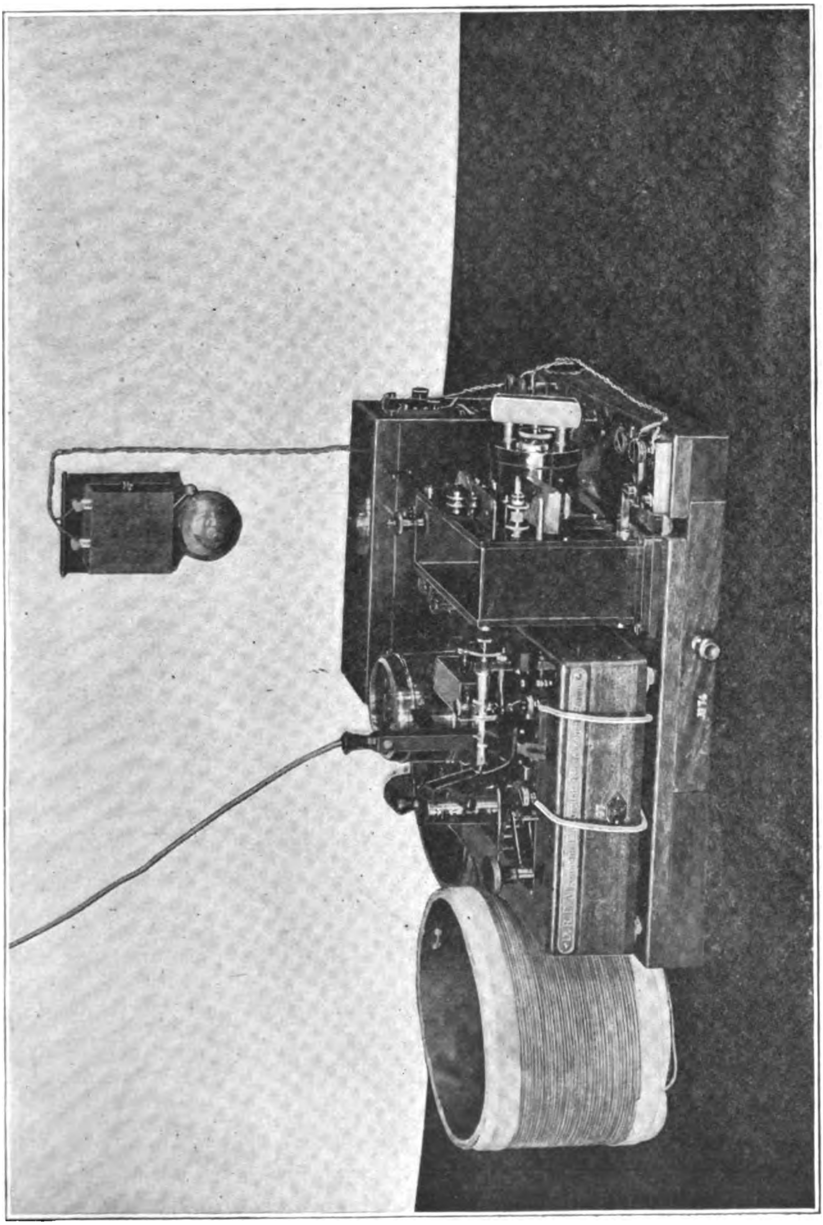

FIG. 5.—RECEIVING APPARATUS.

No 266—02——3

the intensity of the receiver of moving stations, in telegraphing over short distances. If the contact plate is shifted, the tuning is at the same time disturbed, and the waves which reach the coherer weaken. In order to prevent the operator from forgetting to bring his handle back into its initial position when signaling to greater distances, it is connected to, and operates simultaneously with, a cut-out placed in the turbine circuit, so that the operator is compelled before transmitting to bring the handle back into its original position.

VII. *The switches.*—The switches open or close the following connections: The weak-current lead to the coherer, the strong-current lead to the relay, and the high-tension and the ground leads. Thus, any influence on the transmitter is entirely avoided on the receiving apparatus, especially such as short circuits in the strong-current leads, which become evident by sparking at the relay tongue.

On the same switch are also two contact terminals, which, when the switch is open, are connected with one another, and when it is closed are open. The primary current of the induction coil is led in through these two terminals, so that if in sending a message the operator inadvertently neglects to open the coherer switch, on pressing the Morse key, no current is received by the inductor and no sparks are produced.

The heavy-current battery consists of four dry cells which in the beginning produce 6 volts, dropping later to 4 volts. The current from the battery passes through the contact placed in the plug on the receiving apparatus, through the relay tongue, the working contact, the tapper, and so through to the second contact back to the battery. As long as the relay tongue lies against the stationary contact, the polarizing elements are switched into the heavy-current circuit in series. After the polarizing coils become sufficiently charged by a current of short duration, they give an opposite electromotive force, the battery current is reduced to zero, so that a weakening of the battery, which would arise through a permanent current, can not take place.

When the circuit is closed by the tongue of the relay, the current is led through the winding of the tapper, whose resistance is about 6 ohms, and the polarizing elements, which are short-circuited by the relay, discharge simultaneously. If the contact made by the tongue is broken, the polarizing elements absorb the energy arising from the self-induction of the tapper cells and the Morse magnets, so that no ill effect can result to the coherer, as the sparking which might take place on breaking the circuit is prevented.

The Morse apparatus is connected in parallel with the tapper circuit. It has four connecting terminals connected two in parallel,

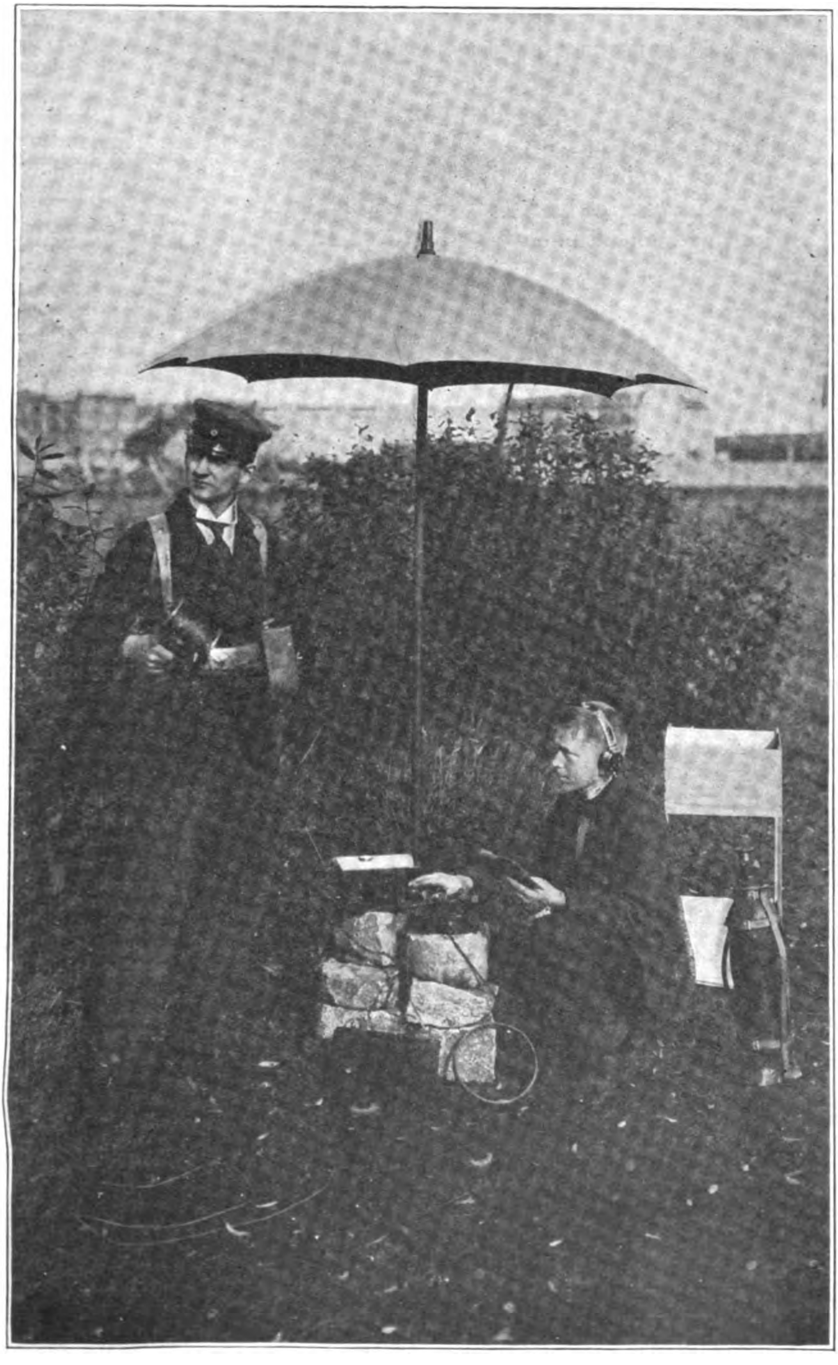

FIG. 6.—PORTABLE FIELD APPARATUS AT WORK.

one pair of which can be disconnected by means of a switch. By connecting the red covered wire with the terminals left in circuit, the Morse magnets are switched in parallel with the tapper magnets.

To the two terminals which are disconnected, an alarm is joined, which is only put into circuit if there is nobody present in the apparatus room. The spark caused by the make and break of the alarm interrupter is eliminated by the provision of polarizing elements which are placed in the woodwork of the alarm.

Figure 1 shows the entire apparatus of Type I in working order.

TRANSMITTER OF TYPE II.

The special inductor, with self-contained sparking gaps and Morse key, in this apparatus is designed especially for field work (fig. 6). Dry cells are used as the source of current. The antennæ or staffs consist of single bare wires, suspended in the air by means of small kites or balloons.

MICROPHONE RECEIVER OF TYPE II.

The receiver consists of a tuned microphone, with telephone receiver. Starting from the fact that microphones, contrary to coherers, respond not to tensions, but to current strengths, the connections for microphone receivers have been so developed that the microphone is placed in the loop of the current waves, which are artificially strengthened. As the microphone, moreover, is not placed in the receiving system, but in a branch from this, it is possible by these connections on the one hand to eliminate all atmospheric disturbances and on the other hand to attain a pure tuning, thereby increasing the receiving intensity.

The dry cell, which is connected in series with the cored or spring microphone and with the telephone receiver through a choking coil by the double-pole switch, is contained in a wooden box. By the opening and closing of a contact push, the microphone becomes audible with a commencing resistance of 150 ohms, so that a weak but permanent current corresponding to the resistance passes through the telephone. If the waves transmitted by the antenna reach the microphone, the resistance fluctuates within small limits and produces current fluctuations from the local battery. At each spark of the transmitter, the noise may be heard in the telephone. It is advantageous to choose a primary frequency of the transmitters at least so great that 100 sparks per second pass, as the sounds are difficult to hear in the telephone with a frequency of vibration less than this.

Such a microphone receiver is tuned by being joined through a tuning coil to the tuned and earthed receiving antenna, close to the earthing point, and switched into a branch circuit, which, by means of the self-induction and the condenser, earthed and made variable by means of the regulator, is therefore tuned to the special-wave form of the transmitter.

The sensitiveness of the microphone receiver is greater than that of a sensitive coherer, so that by the use of a microphone the maximum signaling distance is increased. However, on account of the variable resistance of the microphone, it is impossible to take down signals by means of a relay and a Morse printing apparatus, so that written signals can not be received with the microphone nor can a station be called up.

The Slaby-Arco system of wireless telegraphy will, in all probability, come into general use in Germany, so far as such telegraphy may be practicable. In addition to the navy, which has already adopted this system, the merchant marine is beginning to equip many vessels with the same apparatus. Stations have been erected near Cuxhaven and Bremerhaven for the purpose of communication with vessels of the two great German steamship lines. Permanent stations have also been made at Bremerhaven and on a light-ship anchored 43 miles from the coast.

The Allgemeine Elektricitäts Gesellschaft, of Berlin, has succeeded in fitting out many battle ships of Austria, Sweden, Norway, Portugal, and Chile with telegraphic installations. Russia has purchased these for her postal telegraphs. Denmark has fitted up a number of light-houses and light-ships, situated on an average of 19 miles from each other, with the same apparatus.

The following advantages are claimed for the Slaby-Arco system:

1. The long distances through which signals can be transmitted, having regard to the shortness of the transmitting and receiving antennæ, and the small consumption of energy.

2. The complete exclusion of electrostatic atmospheric disturbances at the reception of the signals.

3. The possibility of using as antennæ for the transmitter and receiver, lightning conductors, iron chimneys, poles, or masts, or other earthed vertical conductors already existing.

4. The entire absence of danger from the transmitter wire.

5. The possibility, due to the use of an electric syntonizer of great intensity, of receiving without interference messages from several transmitting stations at one and the same time.

6. The perfection of the apparatus, in the sense that when employed on board ship it is not influenced by the motion of the vessel, and it can be handled with ease by a working staff, which need not be technically instructed.

This report is taken from different publications issued by the company, which has kindly supplied me with the accompanying photographs. Last year the inventor, Professor Slaby, published an article[*] on the theory of wireless telegraphy entitled "Abgestimmte und Mehrfache Funkentelegraphie," which contains all the arguments which first induced the company to take up the manufacture of the inventor's apparatus. Experts and others who may be interested in the study of this subject can get translated copies of the same by direct application to the company.

ERNEST L. HARRIS,
Consular Agent.

EIBENSTOCK, *August 14, 1902.*

COLD WEATHER AND BELATED CROPS IN GERMANY.

The abnormally cold, wet weather which was noted in these reports during May and June[†] has continued through July and so far into August as to assume in Germany the character of an impending calamity to the cereal harvests of the year. Until the end of July, the season, although remarkably late, was still hopeful, and the condition of the growing crops on the 15th of June and July was in general quite above that of the preceding year. But as the time came for the wheat and rye to ripen, the cold, wet, cloudy weather kept back the harvest long after the usual date and, when the work of gathering in the grain finally began, greatly complicated the task of saving the crops. In many fields, the rye and wheat has been cut and lain in swaths or put up in shocks, exposed to rain and storm, until the grain has been seriously damaged by sprouting. The first samples of the new-crop rye which have been received at the Produce Exchange in Berlin are almost without exception damp, more or less unripe, and, even when artificially dried, of inferior grade. While, therefore, the German grain crop this year will be up to the full average in quantity, its quality has been more or less seriously damaged, and large quantities of rye, which should have been used as breadstuff, will now be distilled or used for feeding animals. It is yet too early to estimate closely the extent of this damage, but accounts from all parts of the Empire indicate that it will be considerable. The latest official returns describe the situation down to August 15 and report that a large part of the wheat and rye of Prussia are still out and in danger. The area of principal crops harvested and growing this year in

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[*] Elektrotechnische Zeitschrift, No. 3, 1901.

[†] ADVANCE SHEETS No. 1364; CONSULAR REPORTS No. 263.

Prussia, as compared with 1901, offers the following suggestive comparison:

Crop.	1902.		1901.	
	Hectares.	*Acres.*	*Hectares.*	*Acres.*
Wheat:				
Winter	1,036,935	2,562,266	660,099	1,631,104
Spring	84,819	209,647	206,705	510,768
Rye:				
Winter	4,628,701	11,437,520	4,277,205	10,568,973
Spring	69,308	178,109	103,303	255,261
Oats	2,722,777	6,727,981	2,945,440	7,387,182
Potatoes	2,223,668	5,500,683	2,292,367	5,664,438
Clover	1,237,146	3,056,987	1,125,107	2,780,149

THE OUTLOOK FOR SUGAR.

Especially interesting in this connection is the probable effect of the cold, wet season on the beet-sugar output of Germany and other European countries during the coming campaign. Thus far, the condition of the growing beets is generally excellent; the amount of sugar which they will produce will depend largely upon the moisture and the amount of sunshine that they may receive during the last ten days of August and the month of September. The growing crop is now in a condition which a few weeks of warm weather would convert into one of the largest on record in proportion to area of cultivation. If the present wet, low temperature should continue, the sugar crop will be proportionately reduced.

Meanwhile, the known facts are that, notwithstanding that the total European area of beet cultivation has been reduced this year to 1,768,300 hectares (4,369,469 acres), as compared with 1,839,000 hectares (4,544,269 acres) in 1900 and 1,978,000 hectares (4,887,636 acres) in 1901, the sugar producers of Germany and Austria are entering upon the new campaign under very discouraging conditions. Aside from the very low price of sugar and an utterly stagnant market, there is the still more depressing fact that the surplus of last year's sugar carried over is greater than at the beginning of any recent campaign. For instance, at the close of the sugar year July 30, 1901, the visible supply carried over in Germany was 258,200 tons, while on the 1st of August, 1902, it was 590,000 tons, and the same proportionate increase of surplus, left-over sugar congests and depreciates the markets of Austria. The average product per hectare (2.471 acres) was 3,144 kilograms (6,931 pounds) in 1899, 3,286 kilograms (7,244 pounds) in 1900, and 3,281 kilograms (7,233 pounds) in 1901. Reckoning the crop of this year at a similar figure, the whole beet-sugar output of Europe will be somewhere between 6,560,000 and 6,130,000 metric tons. This is assuming that the weather during the remainder of August and thenceforth until the beets are gathered will be sufficiently warm and bright to develop in the growing beets the normal percentage of saccharine matter; otherwise, the actual yield may be reduced 10, 15, or even 20 per cent below the above estimate.

Meanwhile, the situation in Germany is somewhat better than in Austria, from the fact that Germany consumes at home more sugar than Austria, and is therefore less dependent upon exports. Germany consumes in various ways about 47 per cent of its sugar crop and exports the remaining 53 per cent, while Austria consumes only 30 per cent and tries to export 70 per cent of the total product. The sugar consumption per capita in Germany is 28 pounds, while in Austria it is only 17.6 pounds—both meager and insignificant as compared with the per capita rate of consumption in Great Britain and in the United States. The effect of the export-bounty system has been to tax sugar out of the reach of a large proportion of the working classes in Europe, and the two most important results aimed at by the Brussels conference were to repeal the cause of countervailing duties in America and reduce the retail price of home-grown sugar in the European markets.

FRANK H. MASON,
Consul-General.

BERLIN, *August 21, 1902.*

INCREASE IN PRICE OF MEAT IN GERMANY.

Under date of September 5, 1902, the secretary of embassy at Berlin, Mr. John B. Jackson, sends the following:

For some time past—more frequently of late—complaints have been made throughout Germany with regard to the increasing price of meat, and various municipal and other bodies have appealed to the appropriate state and national authorities to suspend for a time the stringent rules prohibiting the importation of live cattle from abroad. As yet, however, the answers given have been consistent refusals "on sanitary grounds." In Berlin, where the price of meat is already high, the Association of Butchers has announced that it will soon be necessary to raise prices still more, and similar action has been spoken of elsewhere. It is therefore possible that some relief may be granted before long. The heading "Fleischnoth," or scarcity of meat, is one now seen in almost every issue of nearly every newspaper, and the demand for more freedom of importation, especially for the importation of live hogs, is increasing daily.

This situation has induced the Cologne Gazette, in its issue of to-day's date, to give statistics which show that in Cologne alone there were 7,000 fewer hogs slaughtered in the first eight months of 1902 than during the same period of the preceding year, while for the first six months of the current year there were 34,000 fewer slaughtered in Berlin than in 1901. The Gazette calls attention to the fact that Russia is at present the only country from which hogs can be imported, and that only in restricted numbers, and advocates the opening of the Austrian, Dutch, and Danish frontiers, at least as far as the neighboring districts are concerned. It also refers to the good corn crop in the United States, from which it argues that the price of American pork will go down; but it claims that American prices are at present too high to make the importation of pork into Germany profitable.

Consular Clerk G. H. Murphy transmits from Frankfort, August 25, 1902, translation of an editorial article from the Frankfurter Zeitung of August 21, explaining in detail the cause of the rise in the price of meat and expressing anxiety as to the consequences. The article reads:

Very unwelcome news reaches us from a large number of German cities, in eastern as well as in western districts—the prices of meat are rising rapidly.

First, the Butchers' Guild raised the price of pork, then that of veal, and now experts declare that the price of beef must also be increased. This rise in the value of raw materials must naturally affect the prices of wares manufactured therefrom. The price of sausage has already increased, the prices of other meat products will also soon rise, and there is no hope of a decline in the near future from this new high level. These events are a calamity of great severity, and their beginning was two years ago. Under their influence, hundreds of thousands of German families must endure bitter distress, especially as industrial conditions were already bad enough.

The prices of other articles of food are high at present. The cold and wet summer has made vegetables few and dear, so that the food question is troubling most housewives. The influence of trusts makes itself felt in the same direction. In spite of the prevailing depression, the mighty manufacturing rings are able to maintain their high prices, and the poor consumer is oppressed from every side. It is he who must always bleed. When, under these circumstances, one thinks of the winter with its lessened demand for labor and its increased outlays for the trusts' petroleum and coal, one realizes the impossibility of facing the future cheerfully. We greatly fear that we are at the beginning or an epoch of severe suffering.

Undoubtedly, there have been times when the butchers' profits were large, and when they could easily have afforded to help their customers by lowering prices. The resentment which the public felt because of their failure to do this, or to do it to a sufficient extent, was justifiable. But times have changed, and for several years back, the butchers' trade has certainly not been a profitable one. A glance at buying and selling prices proves this positively. In July of last year, beef cost in Frankfort (gross weight) 64 to 67 marks ($15.23 to $15.94) per centner (110 pounds), prime quality; in October, 70 to 71 marks ($16.66 to $16.89). The price then fell to 64 to 69 marks ($15.23 to $16.42), and now it is 69 to 71 marks ($16.42 to $16.89). This is the price which butchers themselves have to pay. To this must be added allowances for wages, rent, taxes, etc., as well as for loss in waste material. Bull meat cost a year ago 53 to 55 marks ($12.61 to $13.09); now, 58 to 60 marks ($13.80 to $14.28). The price of cow meat in like manner rose from 54 and 56 marks ($12.85 and $13.32) to 61 and 63 marks ($14.51 and $14.99). It is still worse with calves, for which the butchers are already obliged to pay 80 to 82 pfennigs (19 to 19½ cents) per pound. In April, 1901, hogs cost 59 marks ($14.04) per centner; in October, 68 marks ($16.18); in May, 1902, 64 marks ($15.23); and now, 70 marks ($16.66). The above prices are for prime quality at the Frankfort slaughterhouse. Even if the butchers can perhaps do better by taking lower qualities of meat, it is nevertheless evident that the existing relation between purchase and sale is unhealthy; consequently, a further rise in prices is naturally to be expected. There have already been numerous bankruptcies from this cause.

Consumers should not, however, blame the butchers when this rise in prices takes place, unless indeed it is shown that the butchers are inclined to take advantage of the situation. The causes of the disaster must be sought elsewhere. The increase of prices is perhaps, to a certain extent, a result of existing industrial conditions, but the chief cause of the advance in the cost of meat is to be found in the policy which the State has been pursuing for many years. We refer to the imperial policy, influenced by the Agrarians, which increases for the poor the cost of food. The Government and the majority in the Reichstag are now celebrating a triumph, for they have reached their goal, and every family of limited means can now judge as to what the prevailing policy has gained for us and what it has in store for us. First, the way was prepared by the prohibition of the importation of live cattle, thus reducing the available supply of animals fit for slaughter. The exceptions allowed under the prohibition are by no means sufficient to have any visible effect toward averting a calamity. The importation of cattle is so impeded by regulations that the entrance of only high-priced animals is possible, and these certainly will have no effect in the reduction of prices. The demand of the industrial classes for hogs is far in excess of the domestic production, and consequently 1,000,000 live hogs are annually needed from abroad. But this importation is also forbidden, and only about 70,000 hogs are admitted under the exceptional clauses.

In like manner, a war is being waged against foreign meat products through the meat-inspection law. Thus, the importation of canned meat and sausage was stopped on October 1, 1900. The importation of pickled meat in pieces weighing less than 4 kilograms (8.8 pounds) is likewise forbidden by this law. After October 1, the regulations concerning the use of conserving materials will also make themselves felt, and on April 1, 1903, the entire meat-inspection law will go into force.

Recently, the importation of slaughtered hogs has increased, but this business is impossible in the warm season of the year. Moreover, this form of importation can never fully replace that of live animals.

Taking into consideration the increased demands upon the domestic supply, resulting from these restrictions upon importation, it is easy to understand the rise in the price of poor qualities of meat, which must be used more and more in the manufacture of sausage, and the effect which this must have upon the population of Germany.

Meat will become dearer and poorer in quality, and its use will soon become a privilege of the prosperous.

In insisting upon all these moves, the Agrarians have asserted that, if only profitable prices are guaranteed to German farmers, they will be able to supply the home market. All cattle products have now been high in price for ten years, but the farmers have not fulfilled their promises and they are still unable to satisfy the demand. Their words of comfort for the future, their assertion that the fodder crop is good, must be taken for what they are worth, especially as the Prussian Minister of Agriculture has himself most sharply criticized the bad quality of the cattle which are being placed upon the market.

Even if necessity forces the opening of the frontier for the importation of animals from abroad, the Agrarians in the tariff commission have taken care, through the insanely high rates which they have provided for cattle, that there can never be a reduction of meat prices. The German consumer therefore finds himself in the very worst position imaginable—he has been delivered unconditionally into the hands of the Agrarians. He can expect protection neither from the Reichstag nor from the Government, for both are under Agrarian influence. He must therefore bear the burden which he has prepared for himself, and his only hope lies in the possibility of an uprising which will overthrow the present majority.

Under date of August 28, Mr. Murphy sends translation of another paragraph from the same paper, as follows:

LEIPZIG, *August 26.*

The Butchers' Guild has published a notice to the effect that the scarcity of hogs and calves has become a real calamity, and that the butchers are no longer able to bear alone the burden of increased prices. This demonstrates clearly that German farmers are utterly unable to cover the demand for cattle at German slaughterhouses, and proves that the removal of frontier barriers is necessary.

PROVISIONS FOR CARRYING OUT GERMAN MEAT INSPECTION.

Under date of August 25, 1902, the secretary of embassy at Berlin, Mr. J. B. Jackson, sends a clipping from the North German Gazette of the 24th instant, containing an article in regard to the provisions for carrying out the meat-inspection laws. A translation of the article, prepared by Mr. Richardson, third secretary of the embassy, is given below:

The competent ministers sent on the 1st of August of this year a detailed order to all the so-called "Ober" and "Regierung," or Government presidents, intended to prepare the carrying out of the bill (law) regarding the cattle and meat inspection of June 3, 1900, which takes effect on April 1, 1903, and of the Prussian special bill (law) of June 28, 1902, in connection with the above bill (law) of the Empire. The order discusses in two parts the measures which are to be immediately taken in regard to the inspection and sanitary treatment of the meat imported within the custom boundary, as well as that of the cattle and meat when slaughtered in the interior.

The first paragraph in connection with a temporary order sent by the Finance Minister to the provincial boards of customs and taxes on the 17th of May deals with the principles for the institution and equipment of the offices which are to be opened for the inspection of foreign meat according to the resolution of the Bundesrath. Fifty-six offices of the kind are counted for Prussia, 29 of which are intended for the inland and imported meat, whereas the remaining 27 are only intended for the inland. Besides the 56 above-mentioned offices there are 17 custom offices merely for importation without inspection. The meat going through these 17 custom offices is to be sent to one of the offices of inspection, where it is to be inspected. The kind of equipment of each of the offices, especially the number and selection of the offices required, as well as the space and buildings, depends in the first place on the quantity and quality of the meat which is likely to be inspected in the same office. The boards, therefore, have been ordered first to carefully estimate the extent of the importation of meat which is intended for inspection by each office, and this will be no easy task, on account of the alterations and changes of the meat importation which are possible on account of the carrying out of the meat inspection at the frontier.

According to the division of the inspection required by the orders of the Bundesrath into three parts, there are (1) a veterinary inspection of all the fresh and prepared meat with the exception of the fat, (2) a microscopical inspection of fresh and prepared pork, and (3) a chemical inspection of prepared meat and fat. The personnel of the inspection is to be composed of approved animal doctors (veterinary surgeons), of civilians who have been trained for the inspection of pork, and, finally, of chemical experts.

The order contains detailed arrangements as to what way and on what conditions this personnel is to be selected and engaged according to the above-mentioned estimates of the presumptive quantities of inspection meat, with a view to the laws of examination given by the Bundesrath for trained meat inspectors and to the organization of the boards of approbation.

In order to give the officers of the inspection an opportunity of practicing, in many cases special accommodations or other arrangements will be necessary at the offices; for instance, separated laboratories for the veterinary experts for the finer microscopical or bacteriological investigations; then rooms for the pork inspectors will be necessary; and, finally, chemical laboratories will be required if the local conditions of the place do not permit to have the proofs of meat and fat intended for chemical inspection inspected in other laboratories of chemists residing at the place. The boards have been ordered to make an estimate of the extent, place, and expenses of these accommodations.

Finally, propositions are to be made to the Government, whether and to what extent it is necessary to allow the alleviations for the smaller importations of meat, which can be given by the governments of the respective States according to paragraph 14, part 2, of the imperial bill (law).

In the second part of the order the new laws are compiled in a concise way from which the extent of the inland meat inspection may be seen, which is to be introduced on the 1st of April, 1903, or, if already existing, is to be subjected to these laws. Then the formation of the inspection districts are discussed as well as the training and engaging of the necessary personnel of the experts (exclusive competency of approved veterinary doctors, aptness and training of civilians, especially the organization of the boards of examination and execution of the transitory orders) and in a special subsection the way in which the pork inspection is to be inserted into the general future meat inspection. The boards are particularly desired not to raise the difficulties of the introduction of the general meat inspection by making considerable changes in the organization of the pork inspection which already exists in Prussia to an extent of 95 per cent, but to try and remove the faults of this branch of the inspection by gradually training its personnel in a better way and, above all, by a strict control of the meat inspection by experts.

The boards are further directed to collect and to send in the material respecting the costs of the inspection; the manner of fixing and raising them; the arrangements for selling meat by auction; the competency of the respective boards for carrying out the orders of the police with regard to the meat inspection; the way of making complaints against it; and the control of the meat inspectors.

The boards are required to send in the reports within two months, which is not very much time considering the great number of questions to be answered. Only on the base of these reports will the respective ministers be in a position to give definite directions for carrying out the bill in a way according to the different local conditions of the place of inspection. At any rate, it is to be seen from the above sketch, in which not the whole number of the matters to be settled is discussed, that the efforts of all the magistrates and boards connected with the meat inspection will be necessary in order to bring about by April 1, 1903, the day when the bill goes into effect, the vast apparatus required for the meat inspection put into working order everywhere without too great difficulties.

PROPOSED GERMAN TARIFF ON FOOD STUFFS.

The proposed tariff law on food stuffs has just had its first reading before the German tariff commission. While the German Government itself had in mind a decided increase in the price of food stuffs—as indicated by its proposed recommendations upon the new tariff—the commission, which is composed mainly of Agrarians, has drawn up a schedule of duties which presents an extreme advance even over these recommendations. The following table shows the tariff on food stuffs in force at the present time, that recommended by the Government, and that determined upon by the tariff commission:

Article.	Present tariff.	Government proposition.	Tariff commission.
Rye	$0.83	$1.43	$1.67
Wheat	.83	1.55	1.79
Barley	.48	.95	2.14
Buckwheat	.48	1.43	1.67
Cereal flour	1.79	3.21	4.46
Rice	.95	3.81	4.46
Pearl barley and oatmeal	1.74	3.81	4.46
Starch	Free.	3.81	4.28
Vermicelli	Free.	4.76	5.95
Oleomargarine	Free.	7.14	19.04
Potatoes	Free.	Free.	.60
Vegetables	Free.	Free.	.48
Fruits, packed	Free.	1.43	2.38
Strawberries	Free.	3.57	4.76
Pork	Free.	7.14	10.71
Prepared	$3.57 to 4.05	8.33	14.28
Bacon	Free.	Free.	8.57
Sausages	4.05	10.71	16.66
Game	Free.	10.71	16.66

The above figures are based upon a unit of 100 kilograms, or 220.46 pounds.

In the case of five articles, the tariff commission deems the proposed increase recommended by the Government sufficient, namely:

Article.	Present tariff.	Government proposition.
Lard	$2.38	$2.98
Butter	3.81	7.14
Cheese	4.76	4.76
Eggs	.48	1.43
Linseed and rape-seed oil	Free.	2.86

The Agrarians claim that secret understandings between the guilds of butchers and bakers are responsible for the high prices. The Butchers' Guild, of Essen, has just made public the following statement:

> In consequence of the continued rise in the price of pork and beef, which has been obtaining for a period of two years, and does not seem to have reached its climax, we are compelled to raise the price of prepared meats and sausages.
>
> In order to dispel the erroneous opinion on the part of the public that the butchers are responsible for the advance in prices, we, the undersigned guild, declare that this is due to the scarcity of live stock, brought about by the closing of the German Empire to the importation of live stock from the more abundantly supplied neighboring States; for it is a matter of general knowledge that the German agricultural industry can not cover the home demand for live stock. A change in the price of food stuffs can, therefore, not be expected until the tariff barriers have once more been removed.

J. F. MONAGHAN,
Consul.

CHEMNITZ, *August 29, 1902.*

CRISIS IN THE GERMAN POTASH INDUSTRY.

The waning summer has failed thus far to bring the hoped-for revival in most branches of German industry. The revelations of enormous losses through depreciation of material, bad investments, and stagnant demand, on part of several prominent electrical manufacturing companies, has created a gloomy and uneasy impression. The cold, wet, late season has compromised to a greater or less degree the expected profits from the grain harvests of the year. Farmers are still obliged to economize, even in fertilizers, and this and certain other influences have reacted upon the market for potash salts and minerals until that important industry has suddenly lapsed into a condition which the local newspapers describe as critical. Several of the more important mining companies have reduced the wages of their working people from 10 to 30 per cent. The Prussian Fiskus, which controls an important group of mines in Prussian Saxony, has discharged from 350 to 400 workmen, and the Solway

Works at Bernburg have done the same, until a mass meeting of working people was called to solicit the intervention of the local government against further dismissals. When it is remembered that down to the end of April last, all the producing potash mines were running up to their full capacity, many even employing Sunday and night shifts in order to keep pace with the demand, this sudden and ominous depression would seem to be due to some special cause outside of the conditions which underlie the ordinary fluctuations of trade.

The potash minerals of Germany come from a region of which the center is at Stassfurt, in Prussian Saxony, about midway between Magdeburg and Leipzig. They include principally carnallite—a double chloride of potassium and magnesium, from which is derived muriate of potash and several other products—and kainit, a triple salt of potash, chlorine, and manganese, which is used raw as an ingredient in fertilizers, and also as a crude material from which are derived several concentrated salts. The carnallite contains also kieserite, a natural sulphate of manganese which is likewise used for agricultural purposes. These potash minerals were discovered in 1857, underlying, at a depth of more than 1,000 feet, the salt mines of the Stassfurt region which had been worked for centuries. The demonstration by Liebig of the intimate relation of potash to vegetable life lent great importance to this discovery, and borings were made over a large surrounding area which revealed strata of kainit, carnallite, and kieserite underlying, more or less generally, the whole alluvial basin between the Elbe and the Harz Mountains. Mining sites were purchased, shafts sunk, and the industry developed with such rapidity that within a few years the supply of potash salts outran the demand and necessitated some combination of management in order to control the output and maintain remunerative prices.

This led, in 1868, to the consolidation of the nine leading companies into a trust or selling syndicate—the Verkaufs Syndikat der Kaliwerke, one of the oldest, wealthiest, and most powerful of German trade cartels. From its offices at Stassfurt-Leopoldshalle, the center and mart of the one known workable deposit of potash minerals in the world, the production and selling price of that whole group of products was, and is still, absolutely controlled. With the lapse of years, the prosperity of the syndicate stimulated further borings and researches which showed that the potash deposits extended southward into Thuringia and northward across the Elbe into the Province of Mecklenburg. Independent mines were opened by outside parties, who, in order to secure a sale for their products, sought admission to the syndicate, which had a firm and controlling grip upon both the home market and the export trade; but the syndicate had potash enough for its needs, and the new applications for membership were generally refused.

We come now to the events of last year (1901), when, according to official statistics, the whole product of the German mines was 1,500,748 tons of kainit, valued at $5,163,886, or $3.45 per ton, and 2,036,326 tons of other potash minerals, valued at $5,181,974, or an average of $2.54 per ton. Of these, there were exported in the form of kainit, sylvinit, and potash manure salts 592,336 tons, of which the United States took 322,327 tons, or more than 54 per cent of the entire export. Besides these, there were exported 37,216 tons of refined and concentrated potash salts—muriates, sulphates, sulphate-potash magnesia—of which amount 22,821 tons, or 61 per cent of the whole, went to the United States.

These immense imports of crude and manure potash salts are used in America largely in combination with the mineral phosphates of the Southern Atlantic States for the manufacture of fertilizers, which have become a factor of vast and increasing importance to the agriculture of our country. The preparation and sale of these fertilizers has been of late years organized under a system controlled largely by a syndicate, or consolidated company, which has its central offices in one of the Southern Atlantic cities, and has derived its supply of potash from the only available source—the Sale Syndicate at Stassfurt-Leopoldshalle. But, as the business expanded and increased, the American companies became ambitious to secure a larger supply of potash salts and minerals, and, if possible, at lower prices than those fixed and maintained by the German syndicate. Taking advantage of this situation, certain promoters in this country sought to institute secret negotiations, by which several owners of potash mines outside the syndicate could sell their property to the Americans. This was treading on thorny and dangerous ground, for the admission of American capital and enterprise into a natural monopoly so important as the potash industry would be, to conservative opinion, the betrayal of a national interest.

These private negotiations were continued for some time, but came to no other result than to convince the Americans that there was probably mining property outside the syndicate which could be purchased for a sufficiently liberal price, and not realizing the extreme delicacy, from the German standpoint, of such transactions, a number of prominent American capitalists came over two or three months ago, established headquarters at a hotel in Berlin, and proceeded openly and in good faith to look the subject over as a business proposition. The result was what might have been anticipated. The mine owners who had been more or less concerned in the secret negotiations either withdrew or put fantastic values on their property; and, what was still more important, the syndicate became alarmed, took in as members several important outside mining companies which it had previously refused to admit, and then opened negotiations with the visiting Americans by which large contracts were concluded covering the delivery of increased shipments of potash salts and minerals during a term of years. This seemed to be a satisfactory solution of the whole problem, and, as already hereinbefore stated, the whole potash industry showed during April and May a phenomenal strength and activity.

But—say those who seek to explain the present sudden paralysis of the potash interests—the effect of the recent negotiations has been to make the syndicate top-heavy; its productive capacity now exceeds the requirements of the market at syndicate prices, and the consequence is a glut of unsold material and a necessary shortening of production. This has not only disappointed the hopes of the newly admitted members of the syndicate, but has compelled some of the old ones to restrict their output, discharge some of their workmen, and, in some cases at least, to reduce the wages of those who are retained. The Berliner Tageblatt, of recent date, commenting on what it calls "The Crisis in the Potash Industry," says:

> These reductions range from 10 to 30 per cent, varying according to the mine, factory, or location of the labor. The collapse of the prosperous situation is to the workingmen as unexpected and surprising as a cataclysm of nature. The keenly disappointed operatives have manifested great excitement, which has been specially directed against the potash syndicate. General enmity is directed toward the works of the Fiskus, whose surplus profits are known to be very large. The newly opened works are meanwhile known to be less affected by the break down in the market (Absatz-Kalamität), for the reason that their participation in the sales of the syndicate is newly apportioned, and this naturally necessitates a reduction in the allotments apportioned to the older works.

FRANK H. MASON,
BERLIN, *August 27, 1902.* *Consul-General.*

ECONOMIC CONDITIONS IN GERMANY.

Ambassador White reports from Berlin that the latest official statistics show in certain respects an improvement in the commercial situation of Germany during the last six months. The total exports of the Empire during the six months ended June 30 last amounted to 15,789,131 tons, against 15,048,869 tons in 1901 and 15,867,060 tons in 1900. These were valued at 2,286,725,000 marks ($544,240,550), against 2,136,020,000 marks ($508,372,760) for 1901 and 2,326,467,000 marks ($553,699,146) for 1900. The imports during the same period show a diminution amounting to 19,661,486 tons, against 20,768,497 tons for 1901 and 20,250,396 tons for 1900. These were valued at 2,840,160,000 marks ($675,958,080), against 2,751,957,000 marks ($654,965,766) for 1901 and 2,991,252,000 marks ($711,917,996) for 1900. It is said that the exports were to a large extent disposed of for prices less than obtained in the home markets.

The German railways show increased earnings from freight during the last six months, but diminished earnings from passenger traffic as compared with the corresponding period of last year. Their total earnings were 500,000 marks ($119,000) below the estimated earnings as given in this year's budget. The import and excise duties show decreases during the quarter April to June. Usually, however, this is the smallest quarter of the financial year. The chief diminutions were in the import duties and the sugar tax. As to the revenues from other taxes, the tax upon the transfer of securities produced 12,800 marks ($3,047), as against 8,500 marks ($2,023) in the estimates. The lottery-ticket tax produced 8,200 marks ($1,952), as against 11,000 marks ($2,618) in the estimates. The stamp tax on bills of lading produced 1,000 marks ($238) more than the estimates. The Posts and Telegraphs Department shows 5,600 marks ($1,333) more than for the corresponding quarter of last year, but 5,000 marks ($1,190) less than the estimates. This is also usually the smallest quarter for this Department.

GERMAN EXPORT OF IRON MANUFACTURES TO RUSSIA.

The following statistics, relative to the German export of manufactures of iron to Russia, have just been made public:

Article.	1900.		1901.	
	Quantity.	Value.	Quantity.	Value.
Steamboats, iron or steel........................number...	11	$1,715,500	6	$1,463,000
Squares ....tons...	11,281	409,000	6,462	173,750
Wrought iron (in bars), iron tires, and plowshares, tons..	35,484	1,375,000	32,341	929,750
Smaller ware, made of cast and wrought iron..tons...	3,186	1,784,750	3,825	2,143,500
Coarse ironware..do......	21,461	4,656,500	22,128	4,513,000
Crude plates and sheet iron..........................do......	16,062	762,500	14,713	570,000
Bicycles, and parts of.................................do......	131	247,000	141	254,250
Agricultural implements..............................do......	6,209	1,552,250	6,125	1,231,750
Milling machines..do......	1,219	304,750	1,029	244,250
Electrical machines.....................................do......	3,077	1,384,500	2,650	1,060,000
Cotton-spinning machines............................do......	1,156	303,500	1,542	327,750
Weaving machines.......................................do......	785	128,000	936	152,250
Steam engines..do......	5,586	1,006,750	3,847	769,250
Machines for the manufacture of wood and paper, tons..	1,370	232,500	737	119,750
Machine and engine tools...........................tons...	2,370	503,500	1,746	427,500
Pumps ....do......	1,669	375,500	1,372	343,000
Land rollers...do......	1,323	198,500	798	109,750
Sewing machines..do......	2,453	1,031,250	2,748	1,261,500

It will be seen that Russia offers a rich field for exporters of bicycles, agricultural implements, electrical machines, spinning and weaving machines, sewing machines, and machine and engine tools.

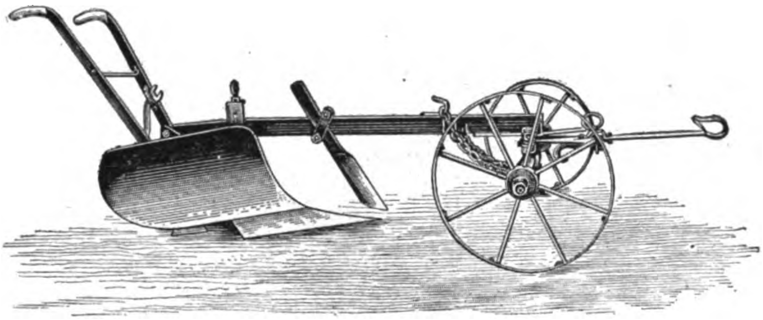
J. F. MONAGHAN,
CHEMNITZ, *August 9, 1902.* *Consul.*

THE AMERICAN PLOW AND THE RUSSIAN FARMER.

In my annual report, dated November 9, 1901, which appears in full in the Commercial Relations for 1901, Vol. II, I ventured to point out that the American plow was unknown, or at least unsold, in Russia. I see no reason why this should be so. The superiority of the American steel soft-center plow is universally admitted. As a rule, it polishes like a mirror and scours in all kinds of soil. The shape of the moldboards is such that it turns the furrow completely over with the least friction, while the German plow, so popular in this country, drops the furrow before it is turned entirely over and prevents the plow from running smoothly. The same is true, only to a greater extent, of the Russian plow. I have received letters from manufacturers at home which confirm my statement in regard to the lack of success the American plow has had in this country. One firm wrote that during 1901 it had sent two men to travel in Russia, but the result was an absolute failure. The men reported that they were unable to sell any plows, nor did they see any plows of American manufacture during their stay in the country. It will be understood that this statement does not include cultivators for garden use, etc., as the American cultivator has been sold in Russia for fully twenty-five years, and is both well and favorably known. In my report above mentioned, cultivators were accidently included among the articles which were practically unknown in this country; I desire to correct this error.

With the conceded superiority of the American plow, the question naturally arises, Why has it made no progress here? The usual definition of a plowman given in the dictionaries is "one who plows or holds and guides a plow." This definition would not hold good in Russia, because the man neither holds nor guides the plow; the plow guides itself. I would direct the attention of manufacturers to the illustrations, which appear farther on, representing the German plow which practically holds this market. The Russian plow is of the same pattern and sells for about the same price. It will be noted that these plows have a carriage in front which supports the beam, and when once the plow is started it is not necessary to either hold or guide it. I have given the dimensions, weight, and cost of each of these plows, and it will be readily seen that the best American plow could not compete successfully with the prices. The duty is by weight and amounts to 75 kopecks (38.6 cents) per pood of 36.1 pounds. The plows illustrated are not the only kinds in use in this country, but it is with these plows that our manufacturers will have to contend if they wish to secure a share of the trade here. Both the German and Russian plows are inferior to the American, but it should be remembered that we want trade. While patient effort would certainly bring success to our plow among the wealthier class of the farming population, this success will hardly be widespread. Every country has its own customs, and the Russian farmer will not use a plow which does not guide itself. It is for our manufacturers to decide whether it is worth while to attempt to overcome this prejudice, or to let the market remain with the Germans. It ought not to be beyond American skill to put a heel on the American plow, to apply a pair of wheels on an axle and attach the same to the beam, thus to all intents and purposes giving this market what it desires.

The Russian farmer likes two, three, four, and even five share plows, because they do more work, requiring additional horsepower but not additional men. Sulky plows could be sold here, and in fact have been sold, but their high price will prevent their general introduction. Plows can be purchased here at prices ranging from $3 up to $40. I have not at hand the latest statistics relating to the importation of plows, but in 1899 Germany sent to Russia about $650,000 worth, Austria $30,000, England $7,000, the United States $4,000, and France $1,000. These figures are a tribute to German energy, as well as a rebuke to other manufacturing nations. I am convinced that our manufacturers can capture the major part of the plow trade of this country, but it will take both time and money to do it. I notice a press statement that a 10-carload lot of American plows is en route for the Russian market, and this may be taken as a hopeful sign. A man behind the plow is not required in this country, but a man with the plow is an absolute necessity for its sale. The man who sells a plow in Russia must be able to work it and must believe in it. Such a man passed through Odessa during the present year, and as he had taken the precaution to ship a few plows ahead and found them here on his arrival he was in a position to demonstrate what they could do. The man was an enthusiast and his success was immediate. The plows sold, it is true, were sulky plows. In conversation with him, it was mentioned that the high price would probably prevent sales. The agent insisted that, given an opportunity to show what his plow could do, he could sell them at his own price. He was quite right; he sold the few he had with him and ordered many more, though he admitted that the number which he could dispose of would be limited. This report, however, is not written in reference to sulky plows, and is in no manner affected by what has been said about them. The cuts which follow may not impress our manufacturers favorably, and doubtless will be regarded as in every way inferior to their own models. It is important, however, that they should be studied for what they may be worth.



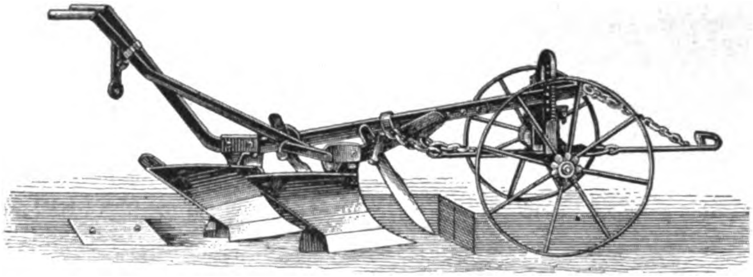
The above cut represents a self-guiding steel plow of the system "Sack," with steel beam, skim colter, and carriage with a body of cast iron or cast steel, as may be ordered. The prices are:

No.	Depth of furrow.	Horses.	Weight, with extra share.		Price, with extra share.	
			With skim colter.	Without skim colter.	Cast-iron body.	Cast-steel body.
	Inches.	*Number.*	*Pounds.*	*Pounds.*		
1	18	6 to 8	414	....	....	....
2	14	6	342	....	....	$25.00
3	10	4	....	216	$15.00	16.00
4	8	4	....	207	14.50	15.25
5	7	3	....	189	13.00	14.00
6	6	2	....	171	12.50	13.25

Separate skim colters for Nos. 1 and 2, at $1.88.

Separate skim colters for Nos. 3, 4, 5, and 6, at $1.15.

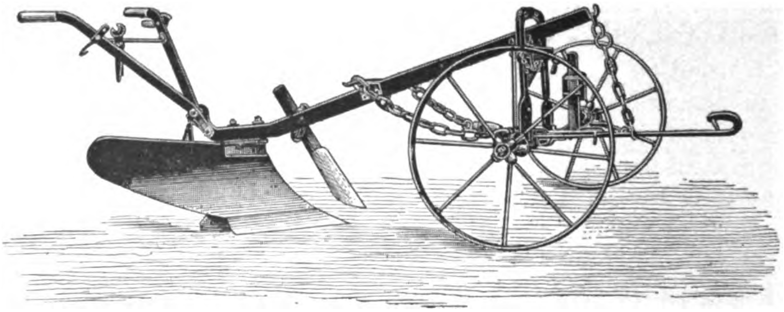
Plows Nos. 2, 3, 4, 5, and 6 are also prepared with higher bodies of cast steel. Unless otherwise ordered, these plows are usually made with hardened armor breast, a profile steel beam, handles screwed on, and a body like the letter S. When specially ordered, they are furnished with M. K. or R. shaped bodies. All of the above plows are sold with or without a skim colter, and also with a movable wing.



This cut represents a double or two-share plow of the system "Sack," with carriage. The frame of these plows is very strong and is of iron, the body of steel or cast iron, and the shares and soles of forged steel. The breast consists of two parts, the upper part of sheet steel and the lower of wedge-shape rolled steel. The shares, breasts, and soles are fixed to the bodies with nut bolts. When ordered, the entire breasts are made of hardened armor steel. These plows are adapted for a light or medium soil. The prices are:

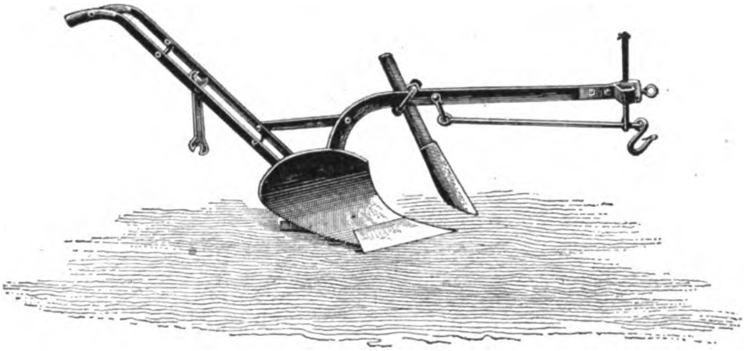
No.	Depth of furrow.	Width of furrow.	Weight.	Price, with steel bodies.
	Inches.	*Inches.*	*Pounds.*	
1	7	19	252	$21
2	7	19	270	21

This plow is also made with a steel frame when desired.



The above represents the "Colonist" steel plow, with colter and carriage, and a double T-shaped (I) beam. The carriage may be a transferable one or not. The beams of these plows, which are of exceptional strength, are of I-shaped steel, which, to prevent clogging, is twisted aside. The plows make a broad and clean furrow. The body is of forged iron and is fitted with a simple appliance for the regulation of the depth of the furrow. For the guidance of the plow, there is attached a firmly built carriage with a transferable rest for the colter. These plows are made in the following sizes:

Width of furrow.	Depth of furrow.	Horses.	Weight.	Price, with extra share.
Inches.	*Inches.*	*Number.*	*Pounds.*	
10½	7	2	153	$13
12½	7 7/16	2 to 3	171	15
14	8 5/16	4	207	16
15¾	10 1/16	4 to 6	234	17

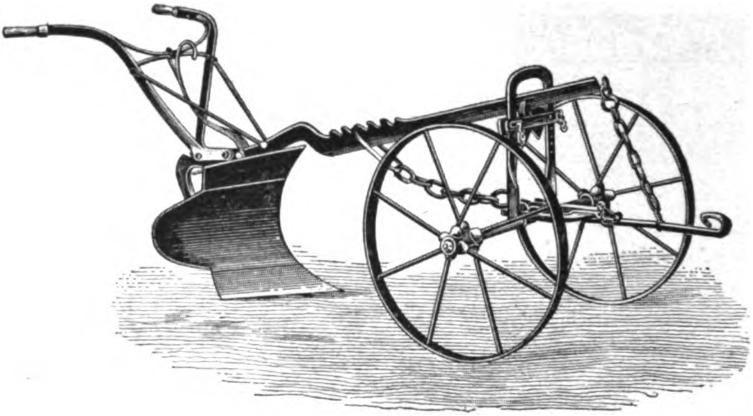


The above cut represents a garden plow without a carriage, with an iron frame, steel share, and steel breast, and made extremely strong. This plow is said to run easily and to be very true. The share is long and pointed, in order to prevent the couch grass and roots from adhering. The breast stands steep and is much bent, in order that the soil may be well thrown and broken. Prices are:

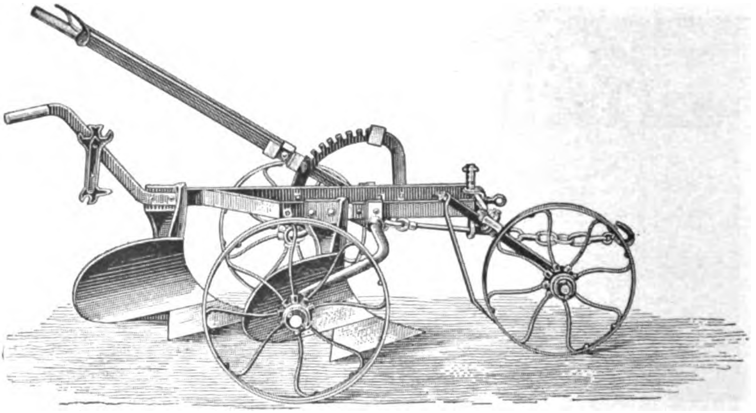
Depth of furrow.	Width of furrow.	Weight.	Price, with extra share.	
			Without a wheel.	With a wheel.
Inches.	*Inches.*	*Pounds.*		
7	9 3/16	90	$8.00	....
7	9 3/16	108	....	$10.00
6⅛	8¾	72	8.00	....
6⅛	8¾	90	....	9.40

Garden plows with two wheels are also much in use. Prices are:

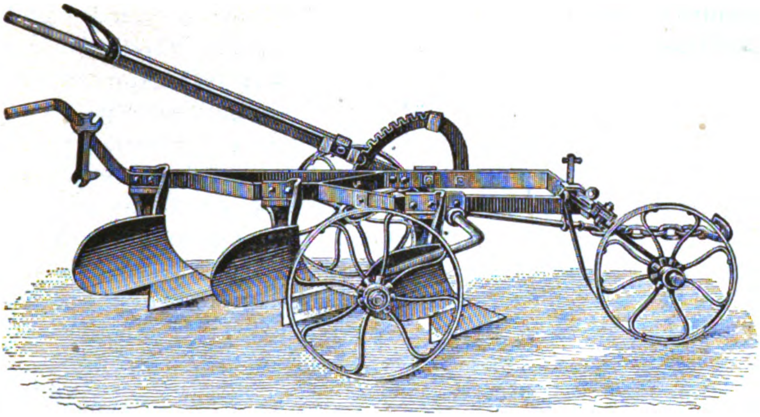
Depth of furrow.	Width of furrow.	Weight.	Price, with extra share.
Inches.	*Inches.*	*Pounds.*	
7	9 3/16	126	$12.00
6⅛	8¾	108	11.25



This represents a twin or turning plow, having an iron frame, steel share, and steel breast, and intended for gardens and hilly localities. It is with or without carriage, and is suitable for light or medium soil. The width of the furrow is 8¼ inches; the depth, 7⅞ inches. The weight without carriage is 108 pounds; with carriage, 180 pounds; and the price is, with extra share, $14.50.

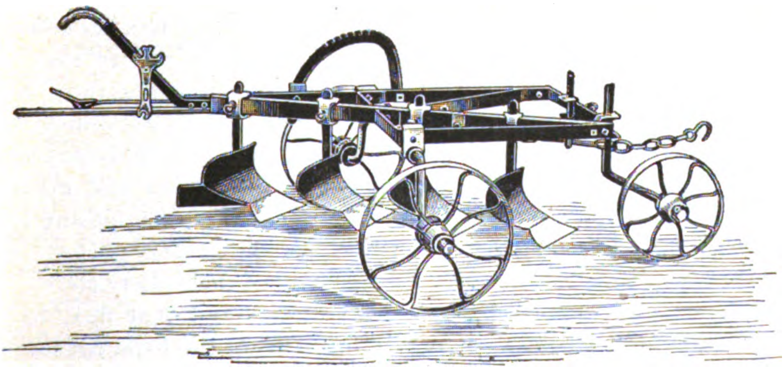


This cut represents a two-share steel plow, with the ordinary means for regulating and raising, with long breasts for medium soil. The width of furrow is $18\frac{13}{16}$ inches; depth, down to 7 inches; weight, 288 pounds; and price, $26.



This shows a three-share steel plow, with ordinary appliances for regulating and for raising. It is for use in medium and in viscid soil and is made in the following sizes:

No.	Width of furrow.	Depth of furrow down to—	Weight.	Price, with extra share.
	Inches.	*Inches.*	*Pounds.*	
1	28⅝	7	261	$25.00
2	23⅝	7	360	30.00
3	28 7/16	7	360	32.50



This cut represents a four-share plow, with the ordinary appliances for regulating and for raising. It makes a furrow up to 4 13/16 inches, and is used for stubble, for covering seed, for the level cutting of clover and grass turf. The distance between the separate shares is so great that clogging seldom occurs. The steel shares and breast are fixed to the quadrangular steel frames by means of nut screws. These frames are firmly attached to the beam of the iron stand by means of strong clasps, and are easily shifted. These plows are made in three sizes:

No.	Width of furrow.	Horses.	Weight.	Price, with reserve share.
	Inches.	*Number.*	*Pounds.*	
1	$23\frac{5}{8}$	4	333	....
2	23	4	315	$30
3	$26\frac{11}{16}$	4	320	30

The four-share plows are built so that they can also be used as three-share plows.

THOS. E. HEENAN,
Consul.

ODESSA, *July 14, 1902.*

FLAX MARKET IN GERMANY AND BOHEMIA.

The reported abundance of the American flax crop upon the one hand and the condition of the continental European flax market upon the other seem to justify an earnest appeal to the American farmer to save the fiber of his flax and thus reap an additional profit from his crop.

From reliable sources it is gathered that there are in the textile districts of Saxony and Silesia, in all, 134,238 spindles for the manufacture of linen thread. In near-by Bohemia (Austria) there are about 200,000 spindles, and in western Germany 98,189. It is calculated that each spindle reduces about 300 pounds of commercial flax per annum, constituting a total yearly consumption of 64,800 metric tons for the entire territory named. Of this quantity about one-third is at present home grown, while the remaining two-thirds are almost entirely imported from the provinces of Russia. In numerous instances leading spinners here have complained of the quality and manner of packing Russian flax, and I can find no reason for supposing that American flax, well and conscientiously prepared and packed, will not find a welcome reception in the markets of these districts.

Farmers and exporters will readily understand that flax, to be marketable here, must meet the requirements of the local consumer. To begin with, the plant should be harvested, not with a sole view to saving the seed and its oil, but with an equal regard for the utility of the fiber. While the stem may, in cases where the plant is of unusual height and the cut very low, be harvested by machinery, yet even then portions of valuable material become lost, and the only absolutely safe way is to pull up the plant by the roots. Care must also be taken that in combing or "rippling" the plant for its seed, the fiber be not lacerated or stems prematurely cracked.

Some of the flax is sold here immediately after this process of rippling—that is to say, before scutching or removing any of the "boon" or woody substance; but there are only a few purchasers who are equipped for these further processes, and it is also believed that the disproportionate cost of transporting this article "in the rough" practically precludes its importation in this crude state. When it is added that flax in the stem sells in these markets for from 80 to 100 marks ($19 to $23.75) per metric ton (2,204.6 pounds), the difficulty of importing in this condition can be readily judged.

The process of "retting" (rotting or macerating), which follows next, is customarily accomplished here in one of three ways: either by "dew retting"—to wit, spreading upon grass or meadow and allowing the slow process of decomposition to accomplish the desired result—or "steeping" in natural water or in tanks of water with a slight addition of heat. These processes certainly consume time, but the product obtained commands the highest prices, and manufacturers here seem to have a fixed objection to flax retted to any extent by swift or violent methods.

Flax to be salable here must, after retting, be freed of the rotted boon in the most approved manner by "braking" and beating or "swingling." There is a slight difference in the market price of the product, according to the method employed; that produced by the brake selling at from $142 to $170 per metric ton, while that resulting from the swingling process commands from $200 to $250.

By this mail I transmit samples* of crude flax pulled and "rippled" or freed of seed merely and of flax retted and cleaned of boon or woody particles by brake; also of such flax retted and swingled. These samples are representative of the quality in use here at prices stated.

It is, naturally, too early to ascertain the probable output of this year's flax crop upon the Continent. Owing to the greater demand and the rising tendency in prices, it is reported that a slightly increased area has been sown; but this increase can not be very important, and there is no reason to doubt that with a proper article our exporters can fairly compete here with the flax producers of any other country.

When it is further remembered that flax, in the countries in question, is admitted free of duty, the American producer has before him the leading factors from which he can determine whether it will pay him to prepare his flax fiber for the use to which it has been devoted from time immemorial.

HUGO MUENCH,
Consul.

ZITTAU, *August 21, 1902.*

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* Filed in the Bureau of Foreign Commerce, where it may be consulted by persons interested.

FUR MARKET OF LEIPZIG.

Nearly the whole fur trade of the world concentrates itself in the two cities of London and Leipzig; but as about two-thirds of the London furs, which are sold at auction, go to Leipzig, the result is that the fur market of Leipzig is really the greater of the two. The Leipzig warehouses receive raw and half-prepared furs from Siberia, European Russia, America, Australia, and China, making the business of the fur exchange worth from $15,000,000 to $17,000,000 yearly. The chief article of import is the raw Astrakhan from Bokhara, which comes via Nizhni Novgorod, this product reaching an importation figure of about 1,000,000 skins, each of which is worth from $2.06 to $3.35. With the cost of tanning and dressing added, the value of this trade amounts to from $3,000,000 to $3,500,000.

The second most important division of goods includes sable furs, of which about 50,000 skins, each worth from $50 to $100, are imported yearly. Of fox skins, nearly 30,000 pelts are tanned and dyed yearly. Lamb skins average about 1,000,000 per year.

Formerly, Leipzig handled annually about 4,000,000 Russian squirrel skins, which were bought mostly in England; but as the fashion of long-fur garniture on ladies' dresses disappeared, the demand was reduced to 2,000,000 pelts. The tails for boas are mostly imitations of marten and sable tails. The sale of the pelt of the white fox in this market amounts yearly to about $500,000, which is about the whole available product of the world's markets.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *August 26, 1902.*

NEW GERMAN STEAMSHIP.

Consul J. E. Kehl sends from Stettin, August 16, 1902, description of the new North German Lloyd steamship *Kaiser Wilhelm II*, recently launched at the Vulcan yards in that city. The cost was 16,000,000 marks ($3,808,000), and she is scheduled to sail during the early part of April, 1903, between Bremen and New York. He says:

The *Kaiser Wilhelm II* is built according to the German Lloyd requirements for the highest register of the four-deck ship class. Her double bottom is divided into 26 water-tight compartments, while the hull proper is divided by 17 bulkheads into 19 water-tight compartments, each compartment having separate outlets to the promenade decks. Her 17 pumps are said to be capable of discharging 9,360 tons of water per hour. The construction of the stern is very similar to that of *Kaiser Wilhelm der Grosse*, excepting that the plating below the water line, inclosing the screw shafts, and above the rudder is cigar shaped, leaving a large arched space on each side between the center line and screw shafts, running forward and gradually tapering for a distance of about 25 feet into the common hull shape. This has been done in accordance with the requirements of the German Admiralty, at whose disposal the ship will be placed in the event of war.

There are 4 sets of 4-cylinder expansion vertical engines, with surface condensers, each set working on 3 cranks, 2 sets for each propeller shaft. The engines are balanced after Mr. Schlick's patent and will indicate altogether 38,000 to 40,000 horsepower. They are set up in pairs, one behind the other, so as to bring a water-tight bulkhead between each pair, thereby increasing the safety of the vessel. The steam will be produced by 12 double-end and 7 single-end boilers, which will work at 225 pounds per square-inch pressure.

The ship's accommodations are for 775 first-cabin passengers, 343 second-class passengers, and 770 steerage passengers.

It may be interesting in this connection to give dimensions of existing leviathans, to afford comparison with the *Kaiser Wilhelm II;* also to note the size of the famous *Great Eastern*, now broken up.

Name of ship.	Date.	Length over all.	Beam.	Depth.	Draft.	Displacement.	Speed.
		Feet.	*Feet.*	*Feet.*	*Feet.*	*Tons.*	*Knots.*
Great Eastern	1858	692	83	57½	25½	27,000	14.5
Paris	1888	560	63	42	26½	15,000	20.5
Lucania	1893	620	65	43	28	19,000	22.1
Kaiser Wilhelm der Grosse	1897	649	66	43	29	20,000	23
Oceanic	1899	704	68	49	32½	28,500	20.7
Deutschland	1900	684	67	44	30	23,200	23.5
Kronprinz Wilhelm	1901	663	64	43	30	21,280	23.53
Celtic	1901	700	75	49	36½	37,700	16
Kaiser Wilhelm II	1902	706½	72	52½	....	26,000	*23

*Contract calls for no less than 23 knots, like the *Kronprinz* and *Deutschland*, which do almost 1 knot better than their contract. It is confidently expected that the *Kaiser Wilhelm II* will break all records by going 24 knots and possibly more.

Under date of August 14, 1902, Mr. Kehl says:

Referring to a report printed in ADVANCE SHEETS No. 1402 and entitled "New German shipyard," the president of the "Vulcan" yards has informed him that the question of establishing works on the Elbe is still unsettled, though for years the company has contemplated such a move.

GERMAN GLASS EXHIBITION.

. During the third week of July, the annual meeting of the German Guild of Glass Workers, including manufacturers of and dealers in glassware of all classes from all parts of the Empire, was held in Chemnitz. These annual meetings, known as the Deutscher Glasertag, or Glaser Fachaustellung, ought to afford a good opportunity for the display of American glassware. Elaborate exhibitions of German goods are made and consultations held for the purpose of estimating present trade conditions and future prospects.

Among the more important exhibits at Chemnitz were artistic glassware, including paintings on glass and graceful moldings; machinery for glass manufacture; glass letters, cases, and miscellaneous ware of all kinds. The work of the pupils attending the local glazier schools was of interest. German dealers also exhibited a variety of American opalescent, cathedral, and ornamental glassware, as well as rosettes and brick and plates of glass.

The exhibitions last about one week, thus affording ample time for the display of wares. Representative men in the glass business from all over Germany are present. By appealing to them directly, the importer can, at a small cost and with little trouble, ascertain the success which his articles are likely to have. Many valuable suggestions can be gained from the criticisms of professionals, while German tastes in this line can be learned from the extensive display of many classes of goods all under one roof.

Last year the Guild of Glass Workers met at Mainz; next year the meeting will be held at Gorlitz, in Silesia, during July.

J. F. MONAGHAN,
CHEMNITZ, *August 13, 1902.* *Consul.*

FIRE EXHIBITION IN LONDON.

Consul-General H. Clay Evans sends from London,* August 13, 1902, circular descriptive of the International Fire Exhibition to be held at Earl's Court, London, from May to October, 1903. Exhibits of United States devices are requested.

Much interest in the equipment of the fire department, adds the consul-general, has been aroused by a recent fire in which the lives of some ten persons were lost, showing the inadequacy of the present apparatus. The circular reads, in part:

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*A report on the same subject has been received from Consul Marshal Halstead, of Birmingham.

> Every possible effort will be made to insure that the exhibition shall be eminently practicable and instructive, and present an exhaustive picture of everything relating to the subject.
>
> The question of fire-preventive methods of building construction and equipment will be accorded equal importance with the question of fire-brigade work and organization.
>
> It is the intention of the British fire-prevention committee to arrange for a series of diplomas for medals to be awarded to exhibitors in the different groups and classes; but in order to enhance the value of the distinction these awards will be strictly limited in number and only issued with the aid of juries with high expert knowledge.
>
> The London Exhibitions, Limited, will provide floor space at the rate 4s. (97 cents) per superficial foot—with a minimum charge of £40 ($194)—and exhibitors will incur no further expense beyond the porterage of their exhibits and the equipment of their stand. In view of the fact that the exhibition buildings are admirably fitted up, both with regard to decoration and sanitary arrangements, this charge is most moderate. Moreover, the Exhibitions Company undertake to engage the best English bands to perform throughout the season, and to have a nightly illumination of the buildings and grounds, with all the general amusements of a first-class exhibition.
>
> Arrangements will be made for fire-brigade and ambulance tournaments, displays, and competitions, and it is intended to hold an international congress of experts in connection with this exhibition.
>
> Foreign exhibitors are reminded that no duty is payable on exhibits entering or leaving England, and special advantages will be granted by shipping and railway companies to facilitate the transport of goods to and from the exhibition.

The exhibits will include:

I.—FIRE PREVENTION.

1. *Building construction.*—Fire-resisting materials and systems of construction; steel construction; wood construction; doors and glazing; screens, shutters, and blinds; protective coverings; impregnated materials.

2. *Building equipment.*—Theaters and places of public entertainment; workshops, factories, warehouses, and docks; hospitals, prisons, and asylums; churches and places of worship; museums and galleries; gunpowder factories and storage of explosives; oil stores, ships, and wagons; ship equipment; equipment of mines, etc.; safes, banks, and deposit buildings.

3. *Electrical safeguards.*—Wiring safeguards, conduits, casings, etc.; switchboards, fuse boxes, registering appliances, etc.; lightning conductors, etc.

4. *Heating safeguards.*—Stoves, ovens, and flues; cleansing of chimneys; hot-water, hot-air, and steam heating appliances; pipe casings and coverings.

II.—FIRE FIGHTING.

1. *Fire-extinguishing appliances.*—Domestic fire appliances; buckets, hand pumps, extinguishers, grenades, etc.; hydrants, sprinklers, etc.; stationary fire engines, etc.; manual fire engines, steam fire engines, chemical fire engines, motor engines, electrical engines, fire floats, tugs, and boats; long ladders; tenders, traps, and horse reels; water towers, hose, branches, nozzles, and brass equipment; hatchets, crowbars, etc.; smoke helmets, fire suits, and respirators; lamps and search lights.

2. *Life-saving appliances.*—Ladders, hook ladders, pompier ladders and fire escapes, shoots; life lines and ropes; jumping sheets and rocket apparatus.

3. *Fire stations and equipment.*—Fire-station fittings and furniture; horse equipment and stable fittings; uniforms, helmets, and clothing; athletic and gymnastic appliances; medals and badges; canteen equipment and band equipment.

III.—FIRE CALLS.

1. *Fire alarms.*—Gongs, bells, hooters, syrens, house-alarm and automatic-call systems, street-alarm systems, alarm posts, lamps, notice boards, etc.

2. *Telephones and telegraphs.*—Telegraph and telephone appliances, switch rooms and switches; overhead and underground connections, posts, conduits, etc.

IV.—SALVAGE WORK.

1. *Salvage-corps appliances.*—Carriages, traps, tarpaulins, tarpaulin sheets, mops, tools, and general appliances.

2. *Salvage-corps stations.*—Station fittings and furniture; horse equipment and stable fittings; uniforms and clothing.

V.—AMBULANCE SERVICE.

1. *Ambulance equipment.*—Ambulance carriages, litters, and stretchers; medical appliances and first-aid sets.

2. *Temporary hospitals.*—Ambulance tents and hospital equipment; fittings and furniture.

VI.—WATER SUPPLY.

1. *Waterworks.*—Reservoirs, waterworks installations, and machinery; private water supply.

2. *Fittings.*—Hydrants for street and house use; pipes, stopcocks, etc

VII.—INSURANCE.

1. *Insurance companies.*—Constitution, organization, and management; plates and badges.

2. *Insurance-office equipment.*—Buildings, offices, and furniture; stationery, maps, charts, tables; literature, posters, and advertisements.

VIII.—MUNICIPAL SECTION.

1. *Fire brigades.*—Model fire-brigade equipments; fire-brigade stations, plans, maps, photographs, and statistics.

2. *Fire survey.*—Building acts, by-laws, rules, and regulations; maps, plans, models, and statistics.

IX.—HISTORY, LITERATURE, AND ART.

1. *History.*—Ancient fire appliances, ancient uniforms and equipments; literature, books, pamphlets, and views.

2. *Literature.*—Books, periodicals, and newspapers; maps, plans, and charts.

3. *Art.*—Paintings, engravings, photographs, prints, and sculpture.

X.—SCIENTIFIC AND SOCIAL.

1. *Societies.*—Fire-prevention committee; fire-brigade societies; federations and unions; insurance institutes; ambulance societies and organizations.

2. *Laboratories.*—Testing stations, laboratory equipment; books and literature.

3. *Pension funds.*—Old-age, widow, and orphan funds.

METRIC SYSTEM IN GREAT BRITAIN.

Consul-General H. Clay Evans sends from London, August 30, 1902, a letter from the secretary of the Decimal Association, showing the progress of efforts to have the metric system of weights and measures adopted in England. The letter says:

It has come to my knowledge that there is a considerable feeling in favor of the adoption of the metric weights and measures in the United States of America, and with this in mind, I am sure that you will be interested in information regarding the prospect of this country adopting metric weights and measures also.

I therefore venture to lay before you the following information: There are 290 members of the present House of Commons so thoroughly in accord with our aims that they have given me authority to publish their names as supporters. If we add to this the number of members of Parliament who would be influenced by a debate in the House of Commons to vote in our favor, we are convinced that we are now strong enough to carry a bill.

During the last four or five weeks, no less than sixty city, town, and county councils have passed resolutions to the effect that it is desirable that the reform should be made in the interest of commerce and education.

One of the most definite results, in fact, I think I may say, the most definite result, of the conference of the colonial premiers was the passing of a resolution in favor of the adoption of the metric weights and measures throughout the British Empire. This will have a most important result, and will render certain the early passing of a bill to give effect to those views.

All the chambers of commerce in this country, nearly all the school boards, the trades unions, and a great number of societies of various kinds have for a long time been active supporters of my association.

The attitude of our Premier may be gathered from some remarks he made to the deputation which waited upon him in regard to this question in 1895. He said: "If I may express my own opinion upon the merits of the case, there can be no doubt whatever that the judgment of the whole civilized world, not excluding the countries which still adhere to the antiquated systems under which we suffer, has long decided that the metric system is the only rational system."

ALLEGED UNCLAIMED ESTATES IN ENGLAND.

Ambassador J. H. Choate sends from London copy of a letter from the chief accountant of the Bank of England, in regard to numerous inquiries that come from the United States relative to alleged unclaimed estates in England. The letter reads:

BANK OF ENGLAND,
London, E. C., August 8, 1902.

SIR: On the 25th of April, 1890, a letter was addressed to my predecessor by Mr. Robert McCormick, the second secretary of your legation, regarding the large number of inquiries that reached the legation concerning funds or "estates" awaiting claimants at the Bank of England, and the operations of so-called next-of-kin agents in extracting fees from the credulous and unwary in connection therewith.

The bank's reply showed that these claims are almost wholly imaginary. A case in point has recently occurred which seems worth bringing to your notice.

The bank have lately received a great number of applications respecting the Whitaker estate (the name of Whitaker being variously spelled). The original basis of these inquiries is probably the occurrence of the name in lists of unclaimed stock and dividends published by the bank in the early part of the last century. The total amount at present unclaimed on several accounts with which the name of Whitaker (however spelled) is connected—in the principal account jointly with three others—is less than £100. The gist of this information has been given to all inquirers.

Some months ago, a person representing himself to be the Rev. W. G. Whitaker called upon me and stated that he had been intrusted by the heirs of the Whitaker estate to investigate their claims. He was told that so far as the bank knew there was no such estate, and that he would probably be doing his friends a service by dissuading them from spending more money over it. I found from subsequent letters that he gave the "heirs" an entirely fictitious account of this interview, encouraging them to proceed.

The inquirers almost all date from the United States. They began writing apparently about 1897, but until the present year the letters have not been numerous.

I gather that the Rev. W. G. Whitaker has been prosecuting the claim in this country for about a year.

I am, sir, your obedient servant,

(Signed.) H. R. ORCHARD,
Deputy Chief Accountant.

ENGLISH RABBIT-SKIN TRADE.

Instead of being sent to certain parts of the European continent—where for a great many years rabbit skins intended ultimately for American use have undergone a process known as pulling—a few bales of these skins were shipped last winter, experimentally, direct from Birmingham to the United States. It was thought, a shipper told me, that we had produced a new machine in the United States which could pull out the long hair of rabbit skins at less cost than by the extremely cheap hand labor of the Continent. I learn that the machine experiment was not a success, and I know the English dealers who were interested in the American venture are again sending their skins to the Continent, where the long, useless hairs are laboriously pulled out by hand and the skins reshipped to hat manufacturers in the United States, who shave off the close hair and use this fur to make felt hats.

Millions of rabbits, British and Australian, are consumed annually in Great Britain. Dealers purchase skins from game and poultry shops, and where rabbits are dressed in households there is, as a perquisite, a penny apiece to the cook. One Birmingham dealer tells me he handled 3,000,000 rabbit skins last year.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, *August 8, 1902.*

CONGRESS FOR PROTECTION AGAINST HAIL IN LYONS.

Consul J. C. Covert, of Lyons, sends the following:

The official report of the International Congress for Protection against Hail has just appeared. I give below a brief synopsis:

After recording the names of the members of the congress—scientists and farmers from nearly all the great nations of the world—the volume reviews the history of efforts in the direction of protection against hail, which became widespread in France, by means of firing cannon, toward the close of the eighteenth century. In 1891, the defense was taken up with earnestness and carried to its present point. In that year, General Dyrenforth undertook to produce rain by the use of cannon, and Signor Louis Bombicci, professor at the University of Bologna, inaugurated a similar process for protection against hail. In 1896, Albert Stieger, bürgermeister of Windisch Feistrits, is said to have turned a hailstorm into a fall of fine rain by the detonations from a number of mortars. In 1899, a meeting was held at which the farmers reported the use of 2,000 grelifuge cannon in Italy. A year later, from 10,000 to 12,000 cloud-firing stations were represented at the congress of Padua. At this congress, it was unanimously voted to continue the war against hail, on condition that it should be done systematically.

The Department of the Rhône, in which this consulate is situated, claims to have established the first cloud-firing post. It now has 834 cannons, covering 45,000 acres of vineyards. Everywhere, there are officers who direct the firing. Signals are established—the hoisting of a flag, the ringing of a bell, or the firing of a cannon. Ten different kinds of cannon are employed, besides the old mortar, which takes a charge of 2 pounds of powder. Of these cannon, 8 are French and 2 are Italian inventions.

In the Beaujolais district, in 1900, it was reported that 21 storms were cannonaded before the wine-making season. On the 2d of June, 10,000 shots were fired during one storm, and the report says "the firing protected us from the hail." At least, all were of the opinion that the electrical discharges ceased after the firing commenced.

> There was no more heavy thunder; it was only heard rolling in the distance. Under the action of the firing, the thick black clouds were rapidly torn to pieces and dispersed. It is true that the wind continued very high, but it did only a little harm to the tender branches of the vine, while on the neighboring lands, from which the storm came, it caused great damage. * * * It is to be presumed that we diminished its force. A number of persons declare that a few soft hailstones fell, accompanied by drops of whitish, starch-colored water.

Upon the whole district protected, there fell but a small shower of water, equivalent to an ordinary sprinkling. Farther off, in the direction of Lyons, the clouds formed anew. At Lucenay, the rain was very abundant and near St. Germain it became a torrent. The water washed deep ravines in the fields in several places. In this place there was no fall of hail. Some of the communes at Beaujolais, north of the field covered by the cannon, were visited by a fall of hail about 1 kilometer (0.62 mile) wide.

The following is the language employed in the report:

> The observations made on the 10th and 11th of June permit us to form a positive judgment of the efficacy of the firing. It is, in fact, certain that where the cannon have been used in time, the most satisfactory results have been produced.

In the general conclusions adopted by 18 hail-firing societies, it was stated:

> No hail fell in the whole length of the field protected by the Society of Villefranche, except on the 28th of July. On that day a little hail fell on a spot that was not protected by cannon.

It was almost always observed that the firing stopped the wind or diminished its force considerably, perforated or cleared away the clouds, entirely or very largely stopping the electric discharges above the protected zone; the lightning and thunder raging only outside of it.

One commune reports that the impression of the people is unanimously in favor of the cannon:

> We declare that during the last two years—that is to say, since our organization—no hail has fallen, while it has fallen in the neighboring communes, but without great intensity.

From Tournus, it is reported that dreadful clouds were each time dispersed; no hail fell, but flakes of snow in small quantities, with very abundant rain. Farmers and wine growers are all convinced of the efficacy of the cannon. The hail commenced its ravages at 400 or 600 feet from the firing.

Similar reports were received from a number of other places. One farmer states that his use of the cannon last year was unsatisfactory; that it hailed hard in spite of the firing. A farmer's alliance (at Boen) reports that it was absolutely established that the clouds which formed in the neighborhood were repulsed. The population appears to be persuaded that the country was protected by the cannon from the storms which visit their country on five successive days in May. "At present, the confidence is rather exaggerated."

A long account is given of a storm which occurred at Villereste on the 3d of September. It was on that day, twelve years ago, that vines were destroyed by a terrible storm. This year, it is said, ominous clouds arose in the west, charged with hail, which was transformed by the firing of the cannon into a beneficent rain. It hailed very hard in the surrounding country which was not protected by cannon. The shots were fired twice a minute, the explosions causing vibrations in the air. The battle continued three-fourths of an hour, when the firing became less frequent, as the clouds seemed to be moving away. The storm then returned, and the firing recommenced as actively as ever and continued an hour and a half, when victory was won.

One farmer said:

> The great savants are not learned enough to explain the phenomena which are produced by the firing against the hail. I, who am not a savant, will not try to discuss it, but I will say that among us there are no more unbelievers; confidence in this system of defense is complete, and we are already talking about definitely completing the organization for next year. The mayor and the municipal council are in favor of contributing as much as possible for the purchase of cannon. * * *

Mr. Lewis Nicolas, of the Gironde, says:

> A very heavy storm arose at 6 o'clock in the evening. In a quarter of an hour firing began, two or three shots a minute, and when the storm reached that spot it ceased and passed toward the southwest. Our territory received only a few drops of rain. * * * The population of our commune and of the neighboring communes, who were hostile to the firing, completely changed their minds after this experience. Everybody is convinced that our rapid and regular firing preserved us from the disaster which St. Emilion suffered. Without daring to formally affirm, as our country people do, that we stopped the storm, the author believes that the firing contributed to the dispersion, and he is convinced that if the cannon had been fired as regularly at St. Emilion as at Pommerol, they would have avoided, or at least greatly diminished, the disaster.

At St. Emilion, where there were only one or two guns and the firing was very irregularly carried on, it is reported that the hail fell forty minutes and the disaster was complete. At Chantelle, in the Department of Allier, it was reported that the clouds were torn to pieces; that at the moment of the appearance of the hail, the firing became more rapid and the lightning less violent. During a storm in July, snowflakes fell after the firing had commenced. On the 1st of September, soft hail and rain fell after the firing commenced. "We had hail at the beginning of every storm; we were completely protected wherever the firing took place, but a great deal of hail fell all around us where there was no firing."

In conclusion, the gentleman who made the reports from which the above extracts are taken says that confidence in the cannon is very great, the faith increasing with the use of the guns. He says the wine growers have vanquished the phylloxera, the mildew, and the black rot, but the most redoubtable enemy is the hail, which every year destroyed from 83,000,000 to 134,000,000 francs ($16,000,000 to $24,900,000) of property. "To-day," he says, "the cannon appear to have combated the hail, to have arrested the thunder, the lightning, and the wind, to have dispersed the clouds, and to have made the sun shine serenely." This is the declaration found in all of the reports sent to Mr. Guinand. He says that he can not explain it scientifically, but that the remedy appears to him to be a good one. "Let us continue to use these means until we have something better," says he, "and not wait for scientific explanations which will perhaps explain nothing."

Twenty pages of the report are devoted to the use of cannon in different parts of Austria. The author of the report, Mr. Gustave Suschnig, thinks that within the next two years scientific explanations may be made of the manner in which the firing destroys the hail. In his country, he says, the Government has established stations to fire against hail. They are directed by men thoroughly posted in this new science and capable of obtaining the desired results. Observations are made and reports are forwarded to the central royal meteorological institute, which has shown an unfailing interest in the cause.

Five hundred and fifty firing stations have been organized in the wine and fruit districts of Styria. The firing field is directed by Col. Rudolph Szeutsek, a member of the imperial and royal army, and by Dr. Rounjak, a zealous apostle of firing against the hail. The firing is carried on in military style. It is mentioned that in one locality there were 30 stormy days and 37 storms. The writer gives minute details concerning the direction of the storms, and says that in the center of the firing fields no hail fell in the year 1900 or 1901, not even in its most gentle form, though these fields were the most damaged in the previous year. He thinks the cannon ought to be at a distance of not over 1 kilometer* from each other, and that from 40 to 50 shots an hour ought to produce the desired results. The War Department, he says, provides powder at a very low price.

One of the reports states that hail fell and caused much damage, but that the firing began too late to prevent it. Another report sets forth that hail fell in damaging quantities in places where there were but few cannon, and they were of an old type. The writer enumerates the number of posts and the number of cannon in use, and concludes by saying that the inhabitants of the country districts are everywhere well satisfied with the firing against the hail.

Ten pages are devoted to a report from Piedmont, where 1,300 cannon are employed.

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* 1 kilometer=0.62 mile.

After a report was read by Mr. Ottavi, Professor Roberto, a delegate from Italy, declared that every time the cannon were used properly and in sufficient number, the results were satisfactory and that only successes were recorded. On the contrary, the poorly organized associations did not give good results.

Dr. Vittorio Alpe, professor at the Academy of Agriculture in Milan, reported on the work in Lombardy, making a detailed statement of the number of shots fired and the number of storms in several provinces. Where the cannon were fired in time and long enough, there was no injury, while a short distance away hail fell in damaging quantities.

The doctor expressed the opinion that the whole work of firing ought to be done under the care of the Government, and an efficient report made every year. In the debate which followed the reading of this report, he asserted that in some places where the hail had fallen destructively, the cannon had worked well, but had not shown themselves equal to the task. This is the opinion expressed by the presidents of the associations, who have not lost faith and will continue the firing next year.

Professor Roberto said that there were some kinds of storms which formed in the midst of a cyclone, against which a special means of defense should be employed, and that the meteorological bureau ought to give information as to the character of storms that visit each district.

Signor A. Marescalchi read a report which comprised the provinces of Piacenza, Parma, Reggio, Modena, Bologna, Revenna, Ferrara, and Fosti, including 20 syndicates and several organizations of cannoneers. In conclusion, he says:

> After having read all that industrious reporters have written to me upon the firing in this region during 1901, I by no means find the number and the kind of facts which tend to establish the efficacy of the hail cannon. The reasons given to justify failures are such that I believe it very difficult to overcome them. They can not, with the existing organization, give absolute and certain assurance that the cannoneers will all be at their posts at the critical moment. * * *
>
> On the other hand, I do not find facts which demonstrate that the hail has spared the territory where the firing occurred while it damaged the surrounding territory. We have had this year in our region, as they probably have had everywhere, storms which, although traversing wide stretches of country without any cannon, have not touched certain portions of the country, leaving unharmed regular areas of land such as are covered by the societies of the cannoneers, and stopping at a distinctly drawn line where there were no cannon.

He concluded his report by saying he considered the firing still an experiment, and that it would so continue for several years to come.

Signor Marconi read a report of the results obtained from the cannon in the provinces of Udine, Bellune, Trevise, Verona, and

Vicence. Four hundred and fifteen cannon were employed in 26 localities. Each district reported the number and character of the storms and their effect. Signor Marconi said, in conclusion, that after having carefully examined the most important facts in connection with this subject, he was perfectly convinced that—

> when we have rational establishments, provided with means adapted to defense and with disciplined and intelligent crews, we can combat ordinary hailstorms with every prospect of victory. The weight of the evidence is to-day still favorable to this system.
>
> As to the failures which occurred, and always will occur, I have said and repeat that our struggle is against the extraordinary forces of nature, and it is not strange if we are sometimes unsuccessful, dominated; but this will be the exception and not the rule, and upon this subject I repeat the remark of Professor Roberto, that, although some ships are lost at sea, we do not cease to navigate.

Signor Marconi said he would give a few facts for scientists, which might perhaps interest them:

> It has been noticed that snow or melted hail fell in May, June, July, and August. A lawyer, Signor Marzioni, saw snow fall on his land on the 10th of June during three or four minutes. I saw the same thing, also, three times. When the firing was accelerated, the hailstorm changed to a fall of snow. On the 1st of July, in one place, the snow was so abundant that it whitened the earth. It has several times happened to me to see a large hole made in the clouds after the firing, through which a clear sky was seen by the aid of an opera glass.

Dr. John Dufour, of Lausanne, made a report on Switzerland. After reviewing all the reports handed him from the subdistricts, he said:

> The results obtained in Switzerland in 1901 are not very decisive. They are not, however, of a discouraging nature, for there were no notorious or striking failures; on the contrary, in a number of cases the firing seems to have had a certain efficacy.
>
> The experiments of the year prove nothing. We must experiment at various stations before positive results can be stated.

Mr. Aguilo y Cortes, agricultural engineer of the province of Barcelona, in his report on the use of hail cannon in Spain, says that in an area of 6,000 acres of ground planted in American vines, there were 35 cannons, of the operations of which he gives a minute and detailed account. He concluded that the constantly favorable results obtained from this system constituted the strongest argument in behalf of it. These results were obtained in localities remote from each other, and were reported by observers worthy of belief.

Dr. E. Vidal—correspondent of the Society of Agriculture, president and founder of several agricultural and horticultural societies—advocates the use of rocket bombs instead of cannon. He says that they rise in the air at the rate of nearly 600 feet per second, and that the bomb explodes in the midst of the storm at the height of a little over 1,000 feet. "One bomb will protect an area of 50 acres, and the expense will be about 8 cents an acre."

Considerable time was spent in discussing the different kinds of instruments used for protection from hailstorms. It was generally admitted that there were some storms against which all means would be powerless. One member advocated the plan of throwing into the clouds a number of small missiles, about the size of a walnut, which would explode in the air. He related an instance where this was tried with perfect success.

Mr. André, director of the Observatory at Lyons, related his experience in attacking what he called a typical storm, "which caused great damage in our Department." He said:

> If you consult the maps which I submit, you will see that on the 7th of August, 1899, the typical storm of which I speak caused havoc in Rinas and Cogny, communes which have firing stations to-day, and that it did not reach Denice. Now let us examine the storm of the 28th of July, 1901. At this date, there were cannon everywhere; the defense by agricultural artillery was complete. Well, it hailed at Linas and Cogny and it did not hail at Denice.
>
> Why did it not hail at Denice? Not because there were cannon there, but thanks to the position of Denice. In order that the storm should reach Denice, it must pass over a hill well known to the people of that country. Behold the reason why, skeptic before the introduction of cannon, I am still a skeptic to-day.
>
> I affirm that I have given all my attention and all of my care to this question. My colaborers and I have studied all of the storms in our Department since 1818, and we have always found the same laws. Therefore, the firing of cannon has changed nothing. You can see this on the three maps which I have made here, which I place at your disposition.
>
> I do not conclude, however, that we must discontinue these experiments—nothing is impossible, and anyone may make a mistake—but what I ask is that the experiments hereafter may be conducted in a manner different from that which has been hitherto pursued. It is not the reports of the Syndicate of the Farmers' Alliance, made immediately after the storms, that must be consulted, but we must have the testimony of persons completely disinterested in the question and strangers to the firing. I expect to make this investigation next year, and I hope to be able to decide whether the cannon have any effect on the storm; but in the meantime, I pray you, do not involve yourselves any further; be prudent. I say that for the present you have enough cannon.
>
> The council-general of the Rhône and the grape growers of Beaujolais asked me if I could send them a dispatch informing them half an hour in advance of the coming of a storm and whether it would hail or not. If we could do this, it would be perfect; unfortunately, that is impossible. All the storms, whether with or without hail, are connected with depressions existing on the Atlantic Ocean and in the Gulf of Gascogny. These depressions are announced to us by the central bureau, and the maps show us that the fall is not very marked and that the barometer varies but little. We know, therefore, from that moment that a storm is expected; but we find ourselves in the position of a gentleman who knows that someone is going to shoot him, but he does not know just when the trigger will be pulled. Follow all the maps of the central bureau; they are manifestly identical.
>
> If Portugal, through the medium of the meteorological station at the Azores, would supply us with dispatches more regularly, the problem could be easily

solved; but the dispatches from Portugal always arrive late, and sometimes do not come at all, so that the benefit which we might derive from that capital station is entirely lost.

It is on account of this organization that the first time we sent a dispatch to the Agricultural Union, we could only say, "Look out!" for which we were criticised because the information was lacking in precision and was given too soon. It must be remembered that in the majority of cases we are obliged to depend upon local phenomena revealed by our instruments alone.

Mr. André said he could not tell what locality in a Department would be especially attacked by hail; that was a question to be determined by daily observation.

In a general way, the storms are connected with depressions coming from the ocean and are caused by secondary whirling movements, impelled by the principal depressions. These whirlwinds are divided by the mountains which they cross into little whirlwinds, differing from each other according to the topography of the country and forming into lines or strips of hail, so that one section has one line or one special strip.

Generally, these strips of hail are not very wide—about 1 kilometer (0.62 mile) wide; a strip 15 kilometers (9 miles) wide is a rare phenomena. The effects are evidently different, accordingly as they are observed from the middle of the strip or the sides. In this last case, the hailstones are smaller and the cannoneer placed at that spot will see these little hailstones fall, mingled with water which has been compared to barley sirup; he will therefore be disposed to attribute this fact to the action of his cannon.

The speaker continued to dilate upon the difficulty of foretelling the coming of storms. "In any case," said he, "I can assure you that our desire is to be useful to you, and, as far as possible, to solve this great question of firing against hail; but up to the present time we have been very undecided."

Mr. Chatillon joined issue with Mr. André concerning his account of several hailstorms, declaring it to be an irrefutable fact that in eighteen fields covered by cannon in Beaujolais, there had been no hail. He also criticised Mr. André's assertion that the reports of the firing were drawn up hastily and without consideration. He said:

I, myself, summoned to the Society of Villefranche the administrators of eighteen shooting societies. These administrators, consisting of 150 persons, adopted the conclusions presented by Mr. Guinand on the results obtained in 1901. We ask nothing more than that Mr. André should come and investigate our reports, and next year we will invite him whenever we meet. * * * In conclusion, there is one thing that I can not explain: Mr. André tells us that he does not believe in the efficacy of shooting against the hail. Why, then, does he take so much trouble to give us a timely notice of the coming of storms?

Mr. Porro, professor of astronomy at the Royal University of Genoa, said that he had tried to study this question from a practical point of view and he would not follow Mr. André in his learned considerations. "We possess maps made by several societies organized for protection against the hail," he said, "and it has been recognized that the direction of the storms has been changed." Professor Porro read a long paper on the foreseeing of the weather as applied to protection from hail. He said that some people had judged the movement to be a passing whim and almost a superstition of the agricultural community. He continued:

> I have thought, since my first studies on the question, that it was not our duty so much to judge or to investigate your efforts, gentlemen, as to bring to their aid the support of the resources of the science of meteorology. With this object in view, I propose a local organization for signaling the arrival of storms on the same parallel, which is practically the system followed in Italy.

The speaker went on at considerable length to outline his plan for forecasting hailstorms, which was to be something rather apart from the present signal service. He proposed a reunion of all the learned men interested in this question to consider it, and he thought they could establish a basis for signaling the approach of hailstorms.

Mr. Gastine, vice-president of the Agricultural Society of the Department of the Bouches du Rhône, read an essay 20 pages long on the subject of the gaseous "tore" or the round ring of smoke impelled from the mouth of the cannon toward the clouds. It was contended that this gaseous projectile, entering the clouds with great velocity, tore them to pieces and prevented the formation of the hail. The practical success of the firing remained a hypothetical question. There must be a very careful investigation in order to judge of its efficacy. He proposed that there should be left in the center of the territory covered by the cannon an unprotected space, and if the hail fell there and did not fall around it, it would be proof that the firing was effective.

The remainder of the first volume of the report is devoted to practical questions concerning the placing of the cannon, the insurance of the cannoneers against accidents, and the kind of cannon to be used.

Professor Roberto, head master of studies of the province of Alexandria, summed up the debates and the papers. He said that experiments had clearly proved that they could protect themselves from hail by the firing of special cannon. He thought that a careful examination should be made of each occasion when cannon were used, otherwise errors or negligence in management would be used as arguments against the whole theory. Cannon of a different caliber were necessary in different localities, according to the proximity to the belt of hail. He went on:

> A very important fact that is generally observed is that hailstorms form, disappear, and continually re-form, a precise image of what happens in the seagoing rivers, where we can see vertical and horizontal whirlpools continually forming

> and disappearing, and where we can observe that the horizontal whirlpools last much less time than the vertical ones, and that they are constantly renewed.
>
> This observation is very important, in order to understand well why the hail strikes one region, devastating everthing; does not strike the next one, and goes on, striking the one beyond, with no apparent reason for it.
>
> Some savants have taken advantage of this to affirm that no conclusion can be drawn from the fact that certain districts have been protected by firing. But if we observe that shooting stations have been established where the hail formerly fell every year, and even several times every year, and if we note that in nearly all the nonprotected regions the harvest was entirely damaged, we are obliged to admit the utility of the firing.

The speaker discussed through several pages the formation of whirlwinds, citing Faye, Volta, Secchi, Bezold, Koeppen, Mollen, and Monti, and said he was convinced that hailstorms are actually formed by a horizontal whirlwind which is created in summer during the warmest hours of the day, in the lower layers of the atmosphere. The vacuum, for the formation of which there is a tendency up to a certain distance from the axis, easily explains the cold, and consequently how the vapor becomes liquefied and solidified. Finally, the rotary movement explains the continuous growth of the hailstorms and their suspension in the air until their weight causes their fall. He added:

> If we admit that hailstorms are formed by a whirlwind with a horizontal axis, we can easily explain the action of the cannon. By the firing, a projectile—the whirlwind ring—is sent toward the clouds and breaks the whirling motion of the air, prevents the formation of the central vacuum required for the whirlwind, and consequently prevents the formation of the cold temperature and the hail.
>
> We can not say with certainty why firing against hail is useful. Facts have proved to us that in certain regions cannon that take a charge of 80 grams of powder suffice, and that in other regions, where the storms are generally more violent, 180 grams are necessary.

Professor Roberto spoke of an instance which he had personally investigated, where the cannon in one locality had caused the fall of the hail already formed and had prevented the formation of new hailstones. Next to this locality "the cannon absolutely prevented the formation of hail." This was a victory for the cannon—one of the most striking demonstrations of their utility. He cited some contrary cases, and asserted that all must be discussed in the light of science. "Facts without science are like blind men. * * * The savants are not yet agreed as to what we want of the cannon—noise or projectile."

Mr. Plumandon, director of the Observatory of Puy de Dôme, followed Signor Roberto, saying that he would deal only with facts, "of which there are enough to justify the great struggle you have undertaken against the hail." He described a formidable storm which had disappeared upon the firing of the cannon, saying it would require many similar observations before one could affirm with certainty the efficacy of the cannon. The instances so often cited where soft snow had fallen after the firing were not proofs of the good work of the cannon. This phenomenon often accompanied mountain storms in the spring and autumn, and sometimes in summer. Mr. Plumandon's paper was so long and so entirely devoted to a scientific discussion of hailstorms, their origin and movement, that I can not translate it in full. Toward the conclusion, he said:

> Some facts which have been advanced in favor of the use of cannon prove nothing, others seem to disprove the theory, and some may serve as a foundation for the hypothesis that the cannon do afford protection. This is a great deal in such a field of effort. Enthusiasts who believe in the speedy and radical suppression of the hail will be disappointed, but conservative people will be satisfied to know that the struggle against hail is not absolutely impossible. Besides, a great incentive has been given. The enthusiasm, born in Italy, has spread to France. It remains to direct it, to control it without diminishing it; in short, to make it useful and profitable. To this end, it must first be thoroughly understood that, in all experiments the aim of which is to operate against nature, time is a most important factor. A great deal of money, an immense fund of energy and willingness would be lost if one yielded rashly to the natural but too human and often illusory desire to triumph at once.
>
> When we thoroughly study storms in their causes and effects, with all the necessary documents; when we take into account the immensity and the widespread areas of the forces which produce and control their movement; when we know the enormous energy they develop, it seems difficult—almost impossible—to admit that the vibrations caused by the cannon, by bombs, rockets, petards, or the whirling rings (turbillons annulaires) impelled by cannon possess a mechanical power sufficient to destroy such terrible phenomena or to restrain their power of destruction; and yet Mr. Roberto, whose great authority as a scientist is well known, believes that he can demonstrate the possibility of doing it.
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> * * * * * * *
>
> I shall be very careful not to give the least advice concerning the practical work of the firing. Upon this, I shall have everything to learn from those who have organized the shooting stations and directed them so competently. One of the first things to be done is to organize a perfect service of meteorological observations, with the effective collaboration of the central bureau and the meteorological commission. The observatory stations ought to be under the control of the municipality. By this means, all the storm conditions in the commune would be well known.
>
> * * * It would be puerile and ill advised to multiply incomplete shooting stations which will serve no purpose and lead quickly to discouragement. For the moment, all efforts should have one object—to establish impregnably the efficacy of the firing against the hail. To this end, authentic facts which will constitute proofs must be accumulated. The enthusiasm which you have shown has proved that it is not necessary to wish you courage. To work, then, and let us hope for victory.

The participation of Professors Roberto, Plumandon, Porro, and other scientists was very satisfactory to the wine growers, who have been suffering for years from the ravages of the hail and live daily in the dread of seeing the result of their months of toil wiped out in a few minutes. The scientists who took part in this congress deem it their duty to examine carefully all the reports that come to them, and to afford whatever aid is in their power in forecasting storms. The scientific journals and societies of Europe generally look with keen interest on the experiments to diminish the destructiveness of hailstorms. The scientists of the congress were very careful about indorsing the opinion, so strongly expressed by the grape growers, as to the efficacy of the cannon, but the weight of their recommendations was in favor of continuing the work, which they called "a magnificent movement."

After all the papers prepared for the congress had been read, the president submitted the following resolution, which was unanimously adopted:

> The Third International Congress for Protection against Hail, sitting at Lyons the 15th, 16th, and 17th of November, 1901, after having heard the reports on the result of the firing of conical cannon and the shooting of rockets during the year 1901 in Austria-Hungary, Italy, Spain, Switzerland, and Russia, decide that the protection against hail merits the attention and the study of the learned, the confidence and the hope of the agriculturist; that the organization of cannon-firing clubs may give satisfactory results, and ought to be encouraged when they propose to protect a continuous surface of considerable extent.

The pioneers in the practice of firing against the hail are satisfied to have obtained the cooperation of the scientific world in their efforts.

The supporters of the theory of cannon firing will soon request the Government to detail army officers to conduct the firing, under the supervision of the meteorological bureau. No one expects that even such an investigation would result in a verdict entirely favorable to the "grelifuge cannon," for it is conceded that there will always be some storms which no human power can resist.

WORK AND WAGES ON FRENCH RAILROADS.

The total length of railroads and of steam and electric tram lines in France is about 24,100 miles. The exact figures it would be difficult to give, for some 7,300 miles (mostly tram lines) are in course of construction or contemplation, and the present total length of working lines is being increased by some 180 miles a year, or half a mile per day.

The number of passengers carried, according to the latest published returns, was 401,793,773 in the year. Each passenger traveled on an average 19¼ miles, and paid 71 cents. There were 21,696,865 first-class passengers, or 5.4 per cent of the total number; 122,145,307 second-class passengers, or 30.4 per cent of the total; and

257,951,601 third-class passengers, or 64.2 per cent. The proportion of third-class passengers tends to increase; twelve years ago the relative proportions were: First-class, 7.6 per cent; second-class, 36.1 per cent; third-class, 56.3 per cent. The first-class passenger travels on an average 37 miles; second-class, 15 miles; and third-class, 20 miles.

Goods carried amounted to 120,380,479 tons, of which more than three-tenths consisted of combustibles. The average distance which each ton was conveyed was 82 miles, and the rate is a fraction under 1½ cents per mile. The receipts from goods traffic were $145,134,689. The total receipts from passengers and goods were $274,503,437, and the expenses amounted to $140,772,035, leaving a profit of $133,731,402. The ratio of expenses to profit is 51.3 to 48.7. The receipts per mile were $11,715, the expenses $6,007, and the profits $5,708.

The number of locomotives was 10,261. There were 4,923 first-class cars, 6,781 second-class, 13,528 third-class, and 2,669 mixed, making a total of 27,901 passenger cars, of which 876 were sleepers or dining cars. Goods and cattle trucks numbered 263,320, and, including 14,568 luggage and brake vans, made a total of 277,888 freight cars. The total rolling stock of all French railways (exclusive of locomotives) was 305,789 cars and wagons.

The average number of locomotives at work every day is 8,306. An engine travels during the year about 25,338 miles. The express trains travel at the rate of from 17½ to 60 miles an hour; the ordinary passenger trains from 10 to 38 miles an hour; and the freight trains from 3¾ to 17 miles per hour.

The total number of employees was: Managers and clerks, 3,076; traffic department, 116,227; locomotive and rolling stock, 74,248; road and buildings, 75,177; making a total of 268,728, of whom 26,754 were women.

The salaries of the officials and workmen do not rule high and are regulated more by the time a man has been in the employ of the company than by the kind of work he is called on to perform, except, of course, in the case of skilled artisans. Moreover, salaries vary greatly, not only on different railroads, but often on the same line. Thus, the Orleans Railroad divides its lines into seven sections, and a plate layer employed in the second section (Department of the Seine et Oise and the district round Paris) will receive $248 a year, whereas, if at work in the seventh section (Tarn and Haute Loire Departments), where living is very much cheaper, he would get only $187 per annum.

It is therefore difficult to give exact figures, but it may be estimated that an ordinary porter receives $21.55 a month, a head porter $25.33, a pointsman from $25.77 to $28.06, and a plate layer

$18.50. The driver of a locomotive earns on an average $36 per month, and his "rewards" for saving coal, etc., usually amount to $14. Stockers receive about $25 per month, with $5.50 as extras. A foreman in the workshops earns as much as $48.50 per month, an ordinary workman $19.30, and an apprentice $14.

Of the 71,273 men working on the principal railroads, 8,651 receive from $13.70 to $16.40 a month; 22,573 from $16.59 to $21.23; 17,592 from $21.42 to $26.05; 11,038 from $26.25 to $21.84; 3,407 from $32.04 to $35.70; 2,680 from $35.90 to $43.42; 1,899 from $43.62 to $53.07; 2,171 from $53.27 to $72.37; and 267 receive more than $72.37—that is to say, 56 per cent of the men receive from $16.59 to $26.05 per month, and 44 per cent get from $13.70 to $31.84 per month.

The men work, on an average, twenty-eight and one-half days per month, and from seven to twelve hours a day. Nearly 15 per cent of the men are lodged.

On the six principal railroads (Ouest, Est, Paris-Lyons-Méditerranée, Orleans, Nord, Midi) there are 15,319 women. They are employed to keep the gates at level crossings, and receive a very small—almost a nominal—salary; but each woman has a cottage (generally with a little garden) rent free. According to the official returns, the women work twenty-eight or thirty days a month, and from ten to fifteen hours per day, but as a matter of fact their duties only occupy them a few minutes at rare intervals (for where the traffic is great, men are employed) and they have plenty of time to look after their household affairs. Not infrequently, the female gate keeper is married to a porter or plate layer, and her small earnings and house help to eke out his wages. Of these 15,319 women, 5,275 receive not more than $2.90 per month; 7,700 receive from $2.90 to $4.80; 1,680 get from $4.82 to $7.72; and 601 from $7.91 to $10.61.

Only sixty women get higher wages than this, and there are only five who receive from $26.25 to $31.84 per month.

JOHN K. GOWDY,
Consul-General.

PARIS, *September 4, 1902.*

INCANDESCENT ELECTRIC LAMPS IN THE NETHERLANDS.

While about 500,000 incandescent electric lamps are annually used in the Netherlands, there are only three firms engaged in their manufacture, viz, Philips & Co., at Einhoven, and E. Goossens, Pope & Co. and the Company "Constantia," at Venlo. Most of the lamps used are imported, the principal part coming from Germany and a small percentage from England, Belgium, and Switzerland.

Glowlamps are imported in every quantity, from lots of 50 or 100 to 1,000 or more. I have not been able to ascertain the total imports, no statistics existing on the subject. Foreign manufacturers who send incandescent electric lamps to the Netherlands are "Die Allgemeine Electricitäts Gesellschaft," Berlin; Siemens & Halske, Berlin; the Edison & Swan United Electric Light Company, Limited; La Société Anonyme Belge, Brussels; the Improved Electric Glowlamp Company, Limited, London; Gebrüder Pintch, Berlin; and the Zurich Incandescent Lamp Company, Zurich, Switzerland.

The market price per lamp for 1902 is quoted at 50 pfennigs (about 12 cents) by the "Allgemeine Electricitäts Gesellschaft." Various discounts are granted, according to the size of the order given. The "Nernst" lamp of this company, which has during the last year come into wide use here, costs 2 marks (48 cents).

The import duty on electric lamps in the Netherlands is 5 per cent of the value, inclusive of packing. There are no regulations restricting the importation of lamps.

The competition in this line is very keen, and purchases are largely governed by price considerations; naturally, the best quality at the lowest figure is in demand. Generally speaking, the people here are favorably inclined toward American manufactures, and if American lamps can compete in price and in quality with German manufacture there will undoubtedly be a good market for them. Electricity is slowly but surely taking the place of gas and oil.

There are no special underwriters' regulations applying to incandescent lamps in the Netherlands, with reference to the base of lamps. Most of the lamps are fitted with the ordinary "Edison screw" bottom contact or with the "Swan bayonet" bottom contact.

The principal importers of electric lamps at Rotterdam are H. C. van Mens, G. S. Kaufmann & Landheer, J. M. A. Bekking, Continental Incandescent Light Company, Croon & Co., G. L. Dahlmann, Electricitiets Maatschappy Volta, Meteor, Nieuwmeyer, Heukelom & Co., Van Rietschoten & Houwens, J. M. Scheffer & Co., C. Wasser & Co., Wynmalen & Hausmann, and Van der Laan & Co.

S. LISTOE,
Consul-General.

ROTTERDAM, *August 12, 1902.*
No 266—02——6

REGULATING THE SALE OF POISONS IN BELGIUM.

In default of a special law, a royal decree has just been issued regulating the sale and safe-keeping of poisonous substances in Belgium. One of the first regulations of the decree compels dealers of poisonous drugs and substances to store such articles apart and keep them separated from other supplies, especially those used for food.

Arsenic and its components—arsenical colors, oxalic acid, and oxide of potassium, hydrofluoric acid, bromide, cantharides, cyanide of potassium, calabar, and St. Ignatius beans—excepting cinnabar, must be kept locked in a special closet, upon the door of which the word "poison," in French, shall appear—and in the Flemish section of the country in both French and Flemish—in large, easily decipherable characters. Noxious substances shall be delivered only upon written request, dated and signed by a well-known person, who shall at the same time explain the intended use of same.

All sale of or orders for poisonous substances must be recorded in a register kept expressly for that purpose, the pages of which must be numbered. Full entry without any omission or blank space must be made in the register immediately after sale or order. The date of sale, kind and quantity of article sold, as well as name, profession, and domicile of purchaser, must be indicated.

Venders must preserve the register for a period of ten years and carefully file requests written upon unstamped paper.

Poisonous substances must be delivered in receptacles or wrappers of such nature that contents can not escape.

The observance of these regulations, as concerns venders of drugs and chemicals, will be under the supervision of inspectors of pharmacies and, as concerns other dealers, under the supervision of the provincial medical commission. The decree will go into effect in three months.

GEO. W. ROOSEVELT,
Consul.

BRUSSELS, *August 12, 1902.*

FIREPROOFING COTTON GOODS.

Some of the more enterprising of the German manufacturers of cotton goods are intending, I am informed, to make a trial of the valuable discovery of Dr. W. H. Perkins, of Manchester, whereby cotton and other similar highly inflammable materials can be rendered permanently fireproof. With the exception of explosives, there is no article that flares up so quickly as cotton when it comes into contact with a light, especially in those particular goods which are made of heavy yarns and "combed out" on both sides in order to give the appearance of flannel. The fireproofing process consists of "asbestinizing" the fabric, by which means permanent immunity from burning is assured, but the exact manner in which it is achieved is not divulged. "Asbestine fabrics" can be washed again and again and yet retain their nonignitable quality. From this it will be seen that the process does not consist in merely putting upon the material a chemical that for the time being renders it noninflammable, but rather, as in the case of mercerizing, in changing the very character of the material. "Asbestined" cloths are said to be perfectly hygienic, and can be safely worn next to the skin.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *September 5, 1902.*

TAR OR OIL FOR LAYING DUST.

The continental press has given considerable notice to experiments made by Dr. Guglielminetti, of Monte Carlo, for laying dust by means of oiling or tarring the roads. One paper says:

> The experiments in oiling or tarring the roads at Champigny were very successful. The apparatus in use were perfected by M. Audouin, engineer in chief of the chemical department of the Compagnie Parisienne du Gaz. Two successive processes of using tar were employed.
>
> (1) Distribution by means of a special type of sprinkler, fitted with a fan-shaped nozzle, pierced with two rows of orifices.
>
> (2) Distribution by means of a tank of about 200 quarts capacity, heated by a traveling furnace, and operated in the same manner as an ordinary springling tank.
>
> It is shown that the road, macadamized and well rounded, should be thoroughly washed and brushed on the day before the tarring operation, and to the extent of laying bare the macadam. After all trace of humidity has disappeared, the hot tar should be spread upon the road in a thin layer.
>
> In the trials at Champigny, when the tar commenced to cool, fine sand was scattered over the section treated. Orders were then given that the road should be closed to traffic for a few days, and it is assumed that in a few months the value of the experiments will be demonstrated.
>
> A similar trial, conducted six weeks ago at Geneva, has given excellent results. The delegates of the "Ligue Internationale des Associations Touristes" held at Geneva, reported on August 16 that the tarred surface was not slippery, that it was extremely hard, and that the horses' hoofs left no visible trace.
>
> During the six weeks that have elapsed, no softening of the layer has been observed in spite of the very hot weather. The frequent rain storms have done no damage. The water washed the surface without making it slippery, and it ran off rapidly, not being able to soak into the road.
>
> The cost of the tar, reckoned at 50 francs ($9.65) a ton, came to about a cent for each square yard.

It is evident that a road protected from humidity and inclemency by this impermeable layer will last much longer than if left in its natural state, so that the lubrication process presents economic as well as hygienic advantages.

The "Touring Club de France," the "Automobile Club de France," and the "Association Générale Automobile" are disposed to encourage these experiments.

HENRY H. MORGAN,
Consul.

LUCERNE, *September 4, 1902.*

HOP CROP IN EUROPE FOR 1902.

The city of Bamberg being recognized as the second in importance in Germany as headquarters for hops (the first being Nuremberg), I have paid considerable attention to the culture of and the trade in this important product. At this time of the year, speculation is ripe as to the result of the crops all over the world, and it may be of interest to American consumers of this article to know what the conditions are in this immediate neighborhood.

From careful interviews with hop planters and hop dealers, I find that the crop in Bavaria is in excellent condition. The weather which, on account of low temperature and more than plentiful rains, has been rather unfavorable to nearly all other crops, has been highly beneficial to the growth of the hop plant, the only visible drawback being a delay of more than two weeks in the ripening of the burr, so that this season's crop in Bavaria will be gathered later than it has been for thirty years. Otherwise, the plants are in excellent condition; they are full of ripening fruit; there is hardly a yellow leaf on the stalks, and no insects or flies have appeared to damage the plants. The weather continuing favorable, the crops in Bavaria will be very fine in quality as well as very large in quantity. The system of raising hops on wire has proved very successful, more so than the old system with poles.

Conditions in Wurttemberg, Baden, Alsace-Lorraine, and other places are reported to be nearly as good as those existing here. In Bohemia, too, the coming crop promises to be of excellent quality, and the output will be fairly large; it is at present computed at nearly two-thirds of last year's enormous crop.

Reports from other hop-growing countries indicate that the crops which are likely to be gathered, are not as good. The crop in England is said to be only one-half of that of last year.

The crop in the United States is also reported short; but the Continent can easily supply any deficiency at moderate prices.

The table below shows an estimate of the hop crop in the most important hop-growing countries for this year, compared with that of 1901. I obtained the same from excellent authority.

Estimate of the hop crop for 1902 and comparison with last year's crop.

Country.		1902.	1901.
Germany:			
Bavaria	cwts.	250,000	98,000
Wurttemberg	do.	65,000	55,000
Baden	do.	50,000	24,000
Alsace-Lorraine	do.	80,000	60,000
Prussia and Altmark	do.	43,000	22,000
Total	do.	488,000	259,000
Austria-Hungary:			
Bohemia	do.	200,000	281,000
Moravia and Galicia	do.	27,000	30,000
Steyermark	do.	17,000	16,000
Hungary	do.	6,000	6,000
Total	do.	250,000	333,000
England	do.	360,000	650,000
United States	bales.	215,000	187,000

W. BARDEL,
Commercial Agent.

BAMBERG, *September 6, 1902.*

ARCHITECTURAL CONTEST IN GREECE.

The city of Patras has decided upon the erection of a church, to cost 2,000,000 drachmas ($250,000),* which will take the place of the present edifice dedicated to St. Andrew, erected early in the second quarter of the last century. With a view to securing something especially apt in design, the committee having the matter in charge (composed of the metropolitan bishop, the governor of Achaia, mayor of Patras, and other prominent officials) has decided to secure plans through an architectural contest, and I have been assured that contributions from American architects will be welcomed. The general order of architecture will be Byzantine, after the spirit of the East. I give below some of the governing conditions, probably sufficient to enable artists and architects to decide whether they can profitably enter the contest. I shall be pleased to furnish additional data to any who may see fit to try for a place. The following general conditions should be observed:

1. The dimensions are left to the discretion of the architect, but must come within a ground space of 2,400 square meters (25,834 square feet).

2. In planning the structure, consideration must be given to possible effects of earthquakes, to which this region is subject.

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* The reductions to United States currency throughout this report were made by the consul.

3. The edifice must accommodate at least 5,000 worshipers, not including standing room in the women's apartments or other annexes.

Possible models of architecture might be found in the Russian Church of St. Nicodemus, in Athens, or in the church of St. Sophia, in Constantinople.

The contest will be divided into two parts; all who pass the first degree will be entitled to enter the second degree, and no others. The general requirements for the first degree are as follows:

1. To submit a general view of the temple and courts on a scale of 1 to 500.
2. View of front of temple; scale, 1 to 200.
3. Two views, front and lateral; scale, 1 to 200.
4. View, cross section, setting forth the general plan, according to the judgment of the artist.
5. Estimate of the cost.
6. An abridged technical memorandum.

The plans submitted will be passed upon by the committee, and the successful architects will be required to meet some additional conditions, among which are the following:

1. View of temple; scale, 1 to 100.
2. Three views—front, lateral, and rear; scale, 1 to 100.
3. Diagram showing the principal architectural features; scale, 1 to 10.
4. Two cross sections, with internal views; scale, 1 to 100.
5. Cross section, showing manner of heating, ventilating, etc.

The contest of the first degree closes at 12 o clock noon of February 13, 1903. All who have successfully passed into the second degree will be given one hundred and fifty days additional from the time the decision is rendered. The final plans will be submitted to some academy of the fine arts in Europe, and in accordance with its decisions the committee will award a first prize of 10,000 francs ($2,000); a second, of 4,000 francs ($800); and a third, of 2,000 francs ($400).

I need scarcely add that much interest is manifested in the attitude of American artists. It is to be hoped that from among the men who have planned and constructed some of the most remarkable buildings in the world will be found one equal to planning a Byzantine temple to the satisfaction of the Greeks.

FRANK W. JACKSON,
Consul.

PATRAS, *August 11, 1902.*

OPENINGS FOR STEEL AND IRON IN GREECE.

Inquiries have recently been made at this consulate concerning the possibility of importing American wire for the manufacture of wire nails. Before bringing the matter to the attention of United States manufacturers, I have taken occasion to inquire into the possibilities of such a trade in this section, and I find (1) that the market is sufficiently active to merit attention, and (2) that it is wholly dependent upon Europe for its supply of the raw material.

The annual importation of steel wire into this district is about 2,000 tons, arriving principally during two months of the year—April and May—at which time there is extraordinary activity in the manufacture of boxes and barrels for the opening of the currant trade in August of each year. Belgium gets the largest share of this trade, although Germany and Servia are participators to some extent; the average price at which these countries export this wire being 20 francs ($3.86) per 100 kilograms (220.46 pounds). In this city there are three nail factories; in Piræus, three; and in Volo, one. Since these inquiries have come from importers interested in keeping the local factories supplied, it may be supposed that they have been investigating conditions in the light of direct transportation, which this port now enjoys with New York, and that there is some ground for believing that wire may be imported from America to advantage.

There is also, I am told, a market for iron girders and beams for building purposes, bridges, etc., to the extent of 6,000 tons or more annually. Practically, the whole of this trade is controlled at present by Belgium, which has also been supplying large quantities of steel rails and construction iron for the extension of the Peloponnesus Railroad to Calamata.

Since no favored-nation clause covers the importation of these materials—both steel wire and iron being on the free list—there is nothing to keep our manufacturers from competing for what trade there is, except prices and terms of sale. The latter will probably form the stumbling block rather than the former, since it is well known that our exporters are not generally disposed to give the easy terms which European countries continually grant. Four months' time is usually asked, or a discount of 3 per cent.

It is altogether probable that the verdict of our exporters will be that the Greek market for such goods is too small to warrant immediate attention. Its smallness will be admitted; at best, not more than two cargoes of these products could be marketed in the Peloponnesus during any one year. However, it is probably true that our principal gains or losses in exportation may be traced to the degree of care with which we have looked after the smaller orders, rather than to the success or failure of greater ventures. Our trade with foreign countries has generally been built up from comparatively humble beginnings. Our ability to successfully compete for great contracts has been demonstrated in the markets of the world, but it may also be worth while to give attention to smaller demands. It holds true between nations, as between individuals, that when satisfaction has been given in one line of trade, there exists a disposition to turn to the same market for other needs. Greece has been buying a few commodities from the United States; if her people wish to see what else we have for sale, however small the demand may be, it will be better to show our goods. I should like to see our manufacturers supply the needs which I have here outlined. Those who are disposed to try for the trade can obtain particulars not herein mentioned, as well as the names of inquirers, by applying to this consulate.

FRANK W. JACKSON,
Consul.

PATRAS, *August 23, 1902.*

AMERICAN FOOD PRODUCTS FOR MALTA.

During my temporary sojourn in the United States on leave of absence, I have been receiving numerous letters from merchants at Malta desiring me to execute commissions for them. One of them seems to demand immediate attention, and reads, in part:

> Will you kindly interest yourself to procure me the agency of some good shippers of codfish, salmon, etc.—not middlemen, but first hands. Also, I wish you would interest some packer to open business relations with me in lard and canned meats; and a firm of cotton-seed-oil refiners. Can you also induce some fruit merchant to send me a box of samples of your apples? I am sure much can be done in these lines.

With regard to the first item, I would say that Malta is a great consumer of fish. Most of the fish used there is fresh, and is either caught near the islands (in very small quantities) or comes from Tunis or Sicily. Very often there is a scarcity, and I have frequently thought that our salt codfish and even prepared mackerel would find favor. Many years ago, in the time of the sailing vessel, such was the case. Canned salmon is used to a certain extent.

With regard to lard and canned meats, I would say that both these lines of American products are sold there to-day. Cotton-seed oil also is in extensive use, with a good demand at all times, but at present it seems to be in the hands of a very few parties.

American apples would, I believe, find a good and permanent demand when once introduced. Malta raises a few apples, but they are of a stunted variety. Our fruit would prove a revelation. The business season of Malta will begin in about a month, and if American houses interested in the above lines will at once take the matter up, there will be a chance to do business in the near future. For good reasons, I am not giving the address of the house desiring these goods; but I am leaving for Malta in a few days, and if communications are sent to me there, I shall take pleasure in handing them to the parties in question, and immediate replies may be expected.

Malta now has direct steamship connection with the United States in the Phelps Mediterranean and New York Steamship Company (a branch of which has now been established a little over three years) and the Levant Line. There are no duties imposed at Malta upon fish or fruit. I shall be pleased to give all assistance possible to those desiring further information.

JOHN H. GROUT,
Consul at Malta.

BOSTON, *September 6, 1902.*

TRAVELING IN TRIPOLI: FLOUR MARKET.

For the benefit of correspondents who have addressed me since the publication of a recent report upon Tripoli,* I have obtained the following information: Travelers desiring to penetrate into the interior must first obtain a special permit from Constantinople, through the legation. This is not so easily done as may be imagined. Six or seven years ago, Mr. Herbert Weld-Blundell, the English traveler, secured a special permit, after seeking it for two years, and was then allowed to explore the ruins of Cyrene to the east of Benghazi. The British Museum, aided by the British Foreign Office and the embassy at Constantinople, tried for two or three years to obtain a similar permit for Mr. Edward Dodson, a well-known traveler and hunter. This was finally accomplished and, in April of 1901, Mr. Dodson was fitted out with men, horses, camels, and provisions by William F. Riley, of Tripoli. He left for Murzuk in Fezzan, and returned via Benghazi early the following September. The object of his journey was to make a collection of mammals for the British Museum.

There is always more or less risk involved in traveling. Mr. Dodson was accompanied by two Zeptias, sent by the governor-general, his own assistant (Mr. Drake), a head Arab, and five others. They narrowly escaped being ambushed by a wandering tribe. This danger is more remote at Cyrene, as the authority of the Government is acknowledged along the coast. However, it is always well to be provided with good, light sporting rifles. Two Italian gentlemen, an engineer and a journalist, are now in Tripoli, having secured the requisite traveling permit, and intend departing for Ghadamés shortly. Reliable Arabs can always be found in Tripoli City. Mr. Riley, above mentioned, would doubtless be the best authority to consult for practical information.

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* ADVANCE SHEETS No. 1397 (July 21, 1902); CONSULAR REPORTS No. 264 (September, 1902).

French and English are of little use in interior Tripoli; Italian is occasionally serviceable. Mr. Dodson overcame this difficulty, so Mr. Riley says, by hiring a cook who acted also as interpreter.

FLOUR.

Five grades of flour are sold in Tripoli at the following prices per 100 kilograms, or 220 pounds—$2.12, $2.50, $3.28, $3.76, $4.14. The low-grade flour is most in demand for use by the Arabs. These prices are c. i. f. Tripoli; merchandise packed in bags of 50 or 100 kilograms, weight of bags being charged for as flour. The terms are: Thirty days, with 1 per cent discount, or sixty days, without discount, at buyer's option. The duty upon flour and all classes of merchandise from whatever country is 8 per cent ad valorem.

I know of no more satisfactory merchant to address than William F. Riley, who is an importer and exporter. He may be written to in English. Other firms named in the directory are:

J. & B. Arbib & Co., silks, plumes, skins.
Borges da Silva.
Galea Federico.
M. J. Hassan.
Is. de Labi.
Levy Frères.
Arthur Ricard.
M. Sahal.
Scialom Tammam & Co.
Scioma & Co.

ROBERT P. SKINNER,
Consul-General.

MARSEILLES, *August 23, 1902.*

BUSINESS OPPORTUNITIES IN PORTUGUESE COLONIES.

Capital seeking investment and American producers seeking new markets—recognizing the force of the economic truth that in order to get something out of a country, something of value must be put into that country—are turning with intelligent curiosity to the colonial possessions of Portugal in Africa, if one may be guided to an opinion in the matter by the letters which reach this legation, asking for information concerning the resources and potential riches of these colonies. To meet this demand, I have taken pains to communicate with a number of men here who have been foremost in developing the trade with the colonies of Portugal in Africa and may be accepted as expert authority on the subject. One who has been for twenty years at the head of perhaps the strongest firm having large interests in these colonies said:

> The most important African colony belonging to Portugal, and the one in which the largest fortunes have been made within the last thirty years, is Angola. The colony of Angola comprises 517,000 square miles and has a sea line of 1,400 kilometers (870 miles). The climate, if tropical along the coast, has proved healthy enough for Europeans nearly everywhere in the interior. I speak from practical experience. There is no soil on the surface of the globe more fertile than that of Angola, and only a few years ago this colony was practically the second largest producer of rubber in the world. In 1899, it exported rubber, in the face of grave difficulties, to the value of $4,500,000, besides large quantities of coffee and other products.
>
> There are also found in large and paying quantities palm oil, palm nuts, cocoa, and excellent hard woods. In Loanda, there are great deposits of copper, and in the southern part of the colony, near Mossamedes, gold has been found, and there is undoubtedly a great future in mining there.
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> The climate, topography, and soil of Angola would render comparatively easy the cultivation, on a very large scale, of such crops as cotton, tobacco, coffee, rubber, and certain cereals. Native labor is ridiculously cheap, and, when intelligently directed, is most excellent.

Another man who has large interests in the Portuguese colonies in Africa, and has spent much time in Angola, says:

> The country is eminently suited to the requirements of sheep raising. The interior is very healthy. I have been much interested in the development of the mineral resources. Nothing of a systematic or very scientific nature has been done in the way of looking for the valuable minerals, but enough has been seen to prove that copper, silver, and coal exist in very large quantities, and even quite near the coast strong indications of all these mineral riches are found. The existence of petroleum in large quantities has been demonstrated, and a Portuguese company is now at work drilling wells. The petroleum fields are near the coast.

A man who for twelve years was at the head of a mercantile house which at the time did the largest business with the African colonies of Portugal, writes me as follows:

> The question of labor, about which you ask, is not difficult to solve. The negroes are good workmen and the Portuguese colonists are hard-working, sensible men. The great product of these colonies for the present moment is rubber. There are apparently inexhaustible supplies of it. You ask me then, if this is so, why Portuguese Africa has not prospered like the Kongo country, which is administered by the Belgian Government. I will tell you. The whole difficulty is one of administration. The rubber in the Portuguese colonies is brought down from the remote interior districts by bearers, who have sometimes a journey of two months to the coast to exchange their produce for money or goods.

As soon as one gets into the interior, there is an absence of roads and a great paucity of Government military stations or trading posts. The country is slightly policed. The consequence is that the negro bearer who carries his rubber has a long, dangerous, difficult journey, and is robbed of a portion of his stock from time to time; and when he returns to his village, if his chief be informed that there is smallpox on the coast, he is likely to be summarily shot by his own people. They have simple but very effective quarantine methods among the natives in Africa. Notwithstanding all these grave difficulties and disadvantages of a practical nature, the trade in the Portuguese colonies thrived enormously until the Kongo State appeared. Then, system, order, and far-seeing patience began to tell, as they always do. With admirable foresight, the Government of the Kongo State developed a vast network of trading stations in the interior of its territory, and built flat launches to bring the produce to tide water via the water ways and rivers of the country. This sort of navigation costs very little. In short, the Kongo Government brought the market close to the producer; and as a consequence of this system and organization, it is able to underbid in the rubber trade the very country where rubber most abounds. The rubber is purchased on the spot, and the native is spared the danger and toil of a long journey to the coast.

In this connection, it should be observed that both the Kongo and Angola only export rubber produced by "wild-growing plants," and though the field is still an enormous one and may be exploited in the present manner for thirty or forty years longer, the ultimate system will be to cultivate the rubber plant systematically. Already, a good beginning in the way of setting out rubber plantations has been made in the Kongo, but I think nothing of this sort has been done in Angola.

With the highly organized and scientific methods of the Kongo State, the Portuguese merchants and dealers have found themselves unable to cope profitably. The negroes refuse to come to the coast with their rubber; they prefer to sell on the spot, as it were, in the Kongo.

The rubber trade in Angola could readily be revived by proper combination and management. The various existing interests would have to be consolidated in some well-working way, and this would be a comparatively easy matter. Then an intelligent system of development would have to be evolved and vigorously and patiently prosecuted. It would be wise to obtain a charter from the Government, if possible, giving wide scope to the company in the way of administration, policing, and the protection of its rights. In return for such favors, the company would have to build roads and establish trading stations. This it would have to do in any event, and success would depend upon the thoroughness with which it was done. There is a vast stream of practically permanent revenue awaiting the man, or group of men, who can bring a proper amount of administrative ability, talent, and capital to the development of the resources of these colonies. In all the continent of Africa there is no richer and more inviting spot, so far as natural resources are concerned. The old haphazard methods have had their day. The new era has come and it awaits a man.

There should also be completed the Ambaca Railway, now reaching to Lucalla, a distance of 364 kilometers (226 miles) from the coast. This road is intended to go to Malange, 200 kilometers (124 miles) farther. There has also been approved the project of the Benguela Railway, from the port of Benguela to a point in the interior about 500 miles distant. The Government is very desirous of having these roads built, and would make very favorable conditions for anyone undertaking the task.

I have consulted several other men who are personally acquainted with the African colonies and the conditions which obtain in them. The information received in every case was in harmony with the views expressed in the foregoing statements. There appears to be no reasonable doubt of the magnitude of the riches with which nature has endowed most of the possessions of Portugal in Africa, and it seems to be equally clear that for the sufficient and adequate exploitation of those riches, new methods and additional capital are of vital and immediate importance, in view of the capable and growing competition in colonial trade furnished by the Kongo State.

The main difficulties which foreign investors in the African colonies of Portugal are likely to encounter will arise from the variety of constructions put upon the law governing the creation and management of corporations formed for the purpose of transacting business in the colonial possessions of this Kingdom. This law is not at present thought to be wholly favorable to the investment of foreign capital in the colonies.

I append some notes concerning the Portuguese colonies, compiled from official sources. These notes, while meager in detailed information from a commercial point of view, serve to show the variety, number, and extent of the Portuguese colonial possessions.

FRANCIS B. LOOMIS,

LISBON, *August 18, 1902.* *Minister.*

PORTUGUESE COLONIES IN ASIA.

India.—New Goa (Nova Goa), or Panjim, capital of the Indian territory, is built near the mouth of the River Mandovi, in the northern part of the island of Goa. It is the seat of the archbishop of Goa, this prelate bearing the title of "patriarch of the East Indies." Here is also situated the court of judicature, having jurisdiction over all districts in Indian territory—the five islands Goa, Bardéz, Salsete, Bicholino, and Tuepem—and the provinces of Macao and Timor.

In New Goa is also the residence of the governor-general. It possesses good modern buildings, a medical and surgical college, a hospital, extensive barracks, custom-house, lyceum, archepiscopal palace, a school of art and industry, a department of public works, a governor's palace; Portuguese, Musselman, and Hindoo schools; library and government printing office, observatory, and light-house.

The principal exports consist of cocoa, salt fish, dried fish, timber, cotton, cattle, bamboo canes, coir, myrobalans, pepper, rice, woven fabrics, oils, and salt.

The principal imports are tar, pitch, shirt collars and cuffs, laces, hosiery, arms and ammunition, needles, wines and spirits, tea, coffee, corks, drugs, spices, wheat, tamarinds, European butter, cheese, sugar, boots and shoes, cloth, carpets, jewelry, cutlery, iron, paints, tobacco, and vehicles.

The area of the Portuguese colony in India is about 1,200 square miles; population, 561,384 inhabitants; public revenue, 940,886 milreis;* public expenditure, 1,057,564 milreis.

Macao.—A city situated in latitude 24° 11′ north and longitude 122° 40′ west of Lisbon; population, 71,800 inhabitants; built on a small peninsula south of the Chinese Empire. It is the capital of the province and possesses some noteworthy buildings—four fortresses, a cathedral, castellated convent, three hospitals, ten churches, the governor's and bishop's palaces, barracks, seminary, lyceum, etc. It is the seat of the provincial government, the bishopric, and the finance department. It has an excellent harbor and the climate is temperate. Here there is a fiscal bureau which regulates the production and sale of opium. The principal trade of this province consists in crude opium, sandal and camphor woods, tea, cinnamon, corn, and silk fabrics; these are exported on a large sale.

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*1 milreis at par being equal to $1.08 in United States currency.

Timor.—Population, 7,000 inhabitants. Timor is an island 8° 52′ north latitude and 134° 46′ longitude east of Lisbon. It has several harbors, the principal one being that of Babam, affording shelter for a considerable fleet. The climate is very hot and unhealthy; the flora, abundant and luxuriant. In the interior are mines of iron, copper, sulphur, coal, and petroleum. Timor forms, with the island of Pulo-Cambing, the district of Timor, which constitutes a subordinate government. It produces corn, cocoa, rice, wheat, coffee, beans, and tobacco. It exports wax, coffee, corn, buffaloes, horses, and sandalwood. The capital is Dilly, situated on the northeast coast, and contains a fortress of stone, three churches, and the residence of the governor. This unhealthy place is traversed by two rivers—the Ahay and the Cebo. The harbor is a most excellent one.

PORTUGUESE COLONIES IN AFRICA.

Province of Cape Verde.

Island of Santiago.—Situated in latitude 14° 54′north and longitude 14° 27′ west of Lisbon. This island is more than 12 leagues in length and 6 leagues in breadth, and is the largest of the group. It is mountainous. All along the shore it is unhealthy, especially in the city of Praia, the chief town of the province. On the hills, at an elevation of upwards of 2,000 feet, it is more salubrious. The island produces maize, beans, manioc, tobacco, rum, cane sugar, sweet potatoes, coffee, and fine oranges. Its principal harbors are those of Praia and Tarrafal. It is divided into two districts—that of Praia, whose chief town bears the same name, and that of St. Catharine, whose chief town is Villa Maria, in Tarrafal. The island of Maio belongs to the district of Praia. Population, 6,000 inhabitants. The city of Praia has some fine streets and squares, and edifices of some importance. The constitution of the district dates from a period prior to 1652.

Island of Fogo.—This lies in latitude 14° 45′ north and longitude 15° 11′ west of Lisbon. It is 15 miles long and 14 miles broad. Its only port for vessels is that of Nossa Senhora da Luz. The island is mountainous and very fertile, producing corn, beans, manioc, rum, sugar, tobacco, and excellent coffee. The breeding of horned cattle and goats is also carried on. One of the mountain peaks reaches the height of 10,000 feet, its summit forming the crater of an extinct volcano. This island constitutes a township or ward, the chief town of which is Villa de San Filippe.

Brava Island.—Lies in latitude 14° 46′ north and longitude 15° 35′ west of Lisbon. It measures 7 miles in length and 6 miles in its greatest breadth. It is mountainous, picturesque, and, in proportion to its area, the most populous of the Cape Verde Islands. Its climate is excellent, and it produces all the corn and other products yielded by the other islands of the group. Chief town, San João Baptiste.

Island of Maio.—In latitude 15° 6′ north and longitude 14° 9′ west of Lisbon. This island is 14 miles in length and 6 miles in breadth, and is nearly level. It has one extensive natural salt spring and also artificial ones. There is considerable pasturage for cattle, which is turned to account. The sea in this locality abounds with fish. The principal harbor is Porto Inglez.

Island of St. Vincent.—In latitude 16° 54′ north and longitude 15° 56′ west of Lisbon. It is 25 kilometers (15.5 miles) in length and 20 kilometers (12 miles) in breadth. It is destitute of trees and but slightly cultivated. It has a splendid harbor—the Porto Grande—the best in the Cape Verde Archipelago. In the town of Mindello, there is an extensive reservoir serving for the water supply of the town and that of vessels entering the port. The principal trade in this islands is in coal supplied to steam vessels. Population of the island, 7,000 souls.

Island of Santo Antão.—Situation, latitude 17° 11′ north and longitude 15° 59′ west of Lisbon. Next to St. Thiago, it is the largest and most productive of the Cape Verde group. It measures 10 leagues in length and 6 leagues in breadth, and is very mountainous. It is abundantly supplied with water of good quality and possesses some mineral springs. The climate is excellent. It produces principally maize, beans, manioc, rum, sugar, tobacco, and excellent coffee, the cultivation of which has been considerably developed during the last few years. The most frequented harbors of this island are Ponta do Sol, Paul, and Carvoeiros. The head of the district is Villa Maria Pia.

Island of San Nicolau (*St. Nicholas*).—Situation, latitude 16° 36′ north and longitude 14° 49′ west of Lisbon. It is 8 leagues long and 3 leagues in average breadth and contains an area of 115 square miles. It is very mountainous. Its principal harbor is Porto Velho. Together with the island of Santa Luzia, it forms a district the head of which is the town of Ribeira Brava, one of the most populous places in the Cape Verde group. This island produces maize, beans, manioc, rum, sugar, tobacco, and a little coffee.

Island of Santa Luzia.—Lies in latitude 16° 46′ north and longitude 15° 48′ west of Lisbon; measures 2 leagues in length and half a league in breadth. This island is for the most part leased to the merchant Cesar Augusto Neves, who turns the pasturage to account for the rearing of cattle and goats. It is inhabited by from fifteen to twenty persons, who are servants of the proprietor. The island forms part of the district of St. Nicolas.

Island of Boa Vista.—Situated in latitude 16° 7′ north and longitude 13° 31′ west of Lisbon. It measures 16 to 17 miles from north to south and 19 miles from east to west. Its principal harbor is Sal-Rei. The climate is tolerably good. In this island are salt, lime, and earthenware factories, and soap works employing an indigenous, oleaginous plant (purgueira). It possesses pasture land serving for the grazing of horned cattle, horses, and goats. It forms a district of which the borough of Sal-Rei is the head.

Ilha (*Island*) *do Sal.*—Lies in latitude 16° 53′ north and longitude 13° 46′ west of Lisbon. It is 18 miles in length and 8 miles in its greatest breadth. The land is level and very barren. In this island a large quantity of salt is prepared, this branch of industry having been considerably extended these last few years. On the coast a good deal of fish is caught, and a fisheries company has been formed. The island forms part of the district of Santa Maria.

Island of San Thomé, West Africa.

The island of San Thomé lies in latitude 0° 23′ north and longitude 15° 50′ east of the meridian of Lisbon. It is 10 leagues in length, 6 leagues in its greatest breadth, and incloses an era of 360 square miles or thereabouts. It is very hilly and picturesque. The highest point is the peak of San Thomé, at an elevation of over 6,000 feet. It is traversed by many streams. Its principal harbor is the Bay of Anna Chaves, where stands the town of San Thomé. Population, 30,000 inhabitants. The climate, in former times unhealthy, is now very tolerable for Europeans, owing to sanitary improvements in the town and other important measures taken. There are now, in consequence, persons who have been permanent residents in this island for the last fifteen years or more and in the enjoyment of good health.

The produce most cultivated is coffee, cocoa, and quinine. Experiments were made in the way of plantations of cinnamon, india-rubber (caoutchouc) trees, etc., but the results, though good, did not satisfy agriculturists for the most part. The timber grown in the forest of San Thomé is for the most part of excellent quality both for building purposes and for cabinet making. Only about half of the island is under cultivation.

Province of Angola.

The district of Loanda comprises twenty parishes, the chief town being Loanda city, which is one of the handsomest in Africa, built in the form of an amphitheater overlooking the harbor. The city is naturally divided into the upper and lower towns.

Alto Dande.—This parish was formerly one of the most considerable of the province, but suffered much from the revolt of the Dembos in 1772. Lately, however, it has come to form a nucleus of commerce and agriculture. It abounds in palms, orange trees, bananas, mango trees, and a great variety of fruits. At one time, the people were most actively employed in the cultivation of beans, manioc, and corn; at present, however, its principal industry is in the plantations of sugar cane, which is considered lucrative. The most important trade in the province is in coffee, which is of the best quality. The inhabitants number about 7,221 and may be subdivided as follows: Europeans, 229; natives, 6,998, of whom 1,875 can read.

Parish of Ambriz.—The commercial houses existing here at the time of the occupation of the place in 1855 were built on the shore, but the violent action of the sea compelled the owners to establish themselves where the town now stands. At present, only the custom-house and a few old warehouses are to be found on the beach, where they are often threatened by the waves. At the northeastern extremity of the territory is a light-house in longitude 13° 7′ east of Greenwich and latitude 7° 49′ south. At the southwestern end of the place is the fortress. There are good barracks for the soldiers of the detachment, a residence for the commandant, storehouses, kitchen, and prisons. Ambriz, which in 1861 counted only 914 inhabitants, increased extraordinarily in population during the ten succeeding years, numbering, in 1871, 2,115 persons. The population in 1894 amounted to only 1,176 inhabitants.

District of Benguela.—This district is divided into six parishes. The chief town is San Felippe de Benguela, standing on low, marshy ground near the sea, to the eastward of the Bay of Santo Antonio, in 12° 29′ south latitude and 22° 36′ longitude. The exports consist of wax, ivory, gum copal, sulphur, hides, palm oil, cattle, and other products. The plan has been approved for a railway to Sahona, 14 kilometers (8.6 miles) in extent, to be made by contract.

District of Mossamedes.—Divided into seven parishes. The chief town is Mossamedes, with a population of 6,500 inhabitants, forming, like Benguela, a subordinate government.

Parish of Porto Alexander.—The headquarters of this parish are in latitude 15° 94′ north and longitude 11° 56′ east of Greenwich. This territory comprises the seacoast from Cape Negro to the mouth of the River Cumene, north of Cape Frio. It was raised to the category of a parish in 1895. It had been a dependency of the parish of Mossamedes, so created in 1894. It was in 1860 that the first Europeans settled in the Bay of Porto Alexander. Its present population amounts to 1,786 inhabitants, 371 being Europeans.

Province of Mozambique.

The city of Mozambique, situated on the island of the same name, possesses some buildings worthy of note. The principal ones are the governor's mansion, the hospital, the district church, the convent of St. Domingo, the finance department, the town hall, the custom-house, and a good marine arsenal; population, 350,000 inhabitants.

District of Cape Delgado.—This district comprises the archipelago of Quizambo and the territories on the mainland denominated Machimba, Pangane, Lumbo, Quissanga, Montepes, Arimba, and the colony of Pemba. The district imports wine, cotton fabrics, and woolen cloths; the exports are ivory, amber, manna, vegetable oil, tortoise shell, and seashells; number of inhabitants, 5,636, including slaves. The Government's head bureau for the district is on the island of Ibo, which is 2 leagues in length and 1 league in breadth. There is a strong fortress in this island.

The Mozambique Company.—The territory whose administration and exploration was granted and transferred to the Mozambique Company by decrees, having all the force of laws, issued on February 11 and July 30, 1891, and on December 22, 1893, is bounded on the north by the River Zambezi from its southernmost mouth to its junction with the River Luenha; on the west, by the frontier of the province of Mozambique, in the part comprised between the rivers Luenha and Limpopo, and by this latter river at the point where it is intersected by the meridian 33° and the parallel 22°, and onward by this parallel till the coast is reached, the necessary inflections, however, being made in order to avoid dividing the lands of one and the same chief, and so that the areas so acquired by the company, or delivered up by it to the Government, may be, as far as possible, equivalents; on the east, the territory is bounded by the ocean.

Quilimane (or Kilimane), Mozambique.—This territory is bounded on the north by the River Quizambo, on the south by the Zambezi, and on the west by the River Chire. It numbers more than 10,000 inhabitants. The chief town is Quilimane City, built on the northern bank of the delta of the Zambezi. The climate of this place is unhealthy, but the surrounding country is very fertile. It possesses a shipbuilding yard.

District of Tete.—This extensive territory is bounded on the north by the River Arnangua and on the south by the Fura Mountains. It is a military station, the headquarters of which are in the town of Tete, built on the right bank of the Zambezi. In the district of Tete there are iron and copper mines.

Lourenço Marquez.

This is bounded on the south by the province of Mozambique and on the west by the Transvaal. The city of Lourenço Marquez, now the capital of Portuguese East Africa, with its excellent harbor and prominent geographical position, is destined to become the Liverpool of South Africa when the improvements are carried out which it needs in order to afford to commerce all facilities and conveniences for the loading, unloading, and conveyance of produce and merchandise. It possesses a garden kept in good order, and buildings adequate for court of justice, municipal chamber, parish offices, etc. The number of private residences worthy of note is now great, and when the maritime works and sanitary arrangements so needful are all completed Lourenço Marquez will be, perhaps, the most important commercial center of South Africa. In 1900, the white inhabitants numbered 4,900 persons and the colored population 10,000. There are numerous commercial houses, both Portuguese and foreign. Since the 1st of November, 1900, the new beacon light at Ponta da Barra has been in operation. This light is of the third class, with a range of 15 miles, illuminating a sector of 200°, comprised between 15° southeast and 45° northwest. The light is white and fixed, except that every thirty seconds it flashes, and for the time is partially eclipsed. It is collocated on a tower of stone painted white, 9½ meters high, the cupola being painted green. Its bearings are latitude 23° 45′ 18″ south and longitude 35° 32′ 41″ east of Greenwich. There is a line of railway connecting Lourenço Marquez with Komatipoort and Barberton, and one also between Lourenço Marquez, Pretoria, and Johannesburg.

TRADE CONDITIONS IN SOUTH AFRICA.

Consul-General H. Clay Evans sends from London, August 25, 1902, newspaper clippings in regard to the competition for trade in South Africa, which read, in part:

Before the war there were 6,000 stamps clanging along the reef, crushing the gold-laden ore. Ere long, we are assured from the chamber of mines—the inner circle of ownership—there will be 17,000 of these ponderous iron heels pounding away between Randfontein and Bocksburg, and the ratio of well-being is to rise in strict proportion. If, for argument's sake, a 6,000-stamp industry signified £3,000,000 ($14,599,000) worth of imports to support the dependent population, we shall want nearly £9,000,000 ($43,798,000) worth of goods of all sorts when the new batteries are in full swing. Who is going to annex this tremendous increase in trade?

There is only one answer: Great Britain. It did not need a special mission to settle the point, for this very simple reason if for no other. Not a single "house" at home but has an agent or representative on the spot. The manufacturer in Great Britain knows better than his rival in any part of the world what are the conditions and requirements of South Africa, from Cape Point to the Zambezi, and he can do all the trade he wants—if he wishes.

The only serious competition will come from America. It does not necessarily follow that the machinists of Lancashire and the Black Country should throw up the sponge before the first round. They can learn many lessons from the enterprising American and creep into his footsteps.

One reason why the costly mine machinery has, in late years, come largely from the United States is this: The kind of machine used on the Rand is to all intents the same as has been used in the silver mines of Nevada for many years, and competition there evolved the fittest, so that when these fields began to develop there was the plant ready for shipment in New York; but, in spite of low ocean freights, the American has been gradually pushed back until we find—what? That Messrs. Frazer & Chalmers, the one-time almost monopolists of mine outfits, have started huge works at Erith for the production of these heavy fabrics. Thus the trade has largely migrated to England, and solely because British materials can not be equaled in the world.

No mine ever starts unless the ground has been tested by a "bore hole," drilled, it may be, through a couple of thousand feet of rock in search of the precious reef. The drill, which is a disk studded with rough diamonds, eats its way downward with a rotary motion, and in its hollow interior lodges the "core," a slender cylinder that is now and again examined for traces of banket, or gold-bearing rock. Now, why is it that the British firms can not make headway with their drills against the Americans?

There is not a British drill at work on the Rand; they are heavy, cumbrous, slow. The American machine is light, compact, easily worked. Of course, diamond drills have been in use so long in America that the type has been perfected, but experts tell me there is no earthly reason why the same or a better machine should not be turned out from a Lancashire or Staffordshire workshop. As drills cost from £1,000 to £5,000 ($4,860 to $24,300), according to the length of rods, there is money waiting to be earned.

In the early days of the Rand, the supply of picks, shovels, light trolleys, and rails used underground to carry the hewn rock to the shaft foot was almost entirely in the hands of Americans. Sheffield and Birmingham have captured this market and can hold it against all comers on downright merit. For the same reason, Tangye's and "Lancashire" boilers are favorites along the reef. Also, where once the Americans supplied three-fourths of the compressed-air drills used against the "face" below ground, the "Climax," made in Cornwall, now stands in the first place. On winding engines and air compressors almost every name plate bears the address of some British firm.

The Duchy also has perseveringly set itself to work against Germany in the making of safety or time fuses, of which large quantities are used in blasting the banket rock. Germany not so long ago had this supply as a monopoly, but by sheer merit the fuses made at Bickford, Cornwall, have regained a very large portion of the lost business.

No one need be surprised to learn that America walks off with the lion's share of trade in food supplies. The enormous grain stores of the West, the abattoirs of Chicago, and the colossal tinning depots of that country send their surplus here on terms of cost and freight that render British competition hopeless even if Great Britain were a producing center instead of a world's entrepôt.

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British trade is in an exceedingly strong position in South Africa, and in those lines in which she may naturally expect to share, Great Britain was never better placed.

Let the British manufacturer bear these figures in mind: Of the whole Transvaal import trade the Old Country does 75 per cent, America 15 per cent, and all other countries in the world divide 10 per cent among them.

America comes in with goods that nature and experience have fitted her to supply; the other countries owe what slender foothold they have in this market to ingenuity, tact, and cheapness. When Lancashire and Yorkshire, Staffordshire, and South Wales agree to work twelve hours a day for 60 per cent less than current wages, there will be only two competitors for custom here—John Bull and his American cousin. But is the sacrifice called for?

GERMAN TRADE.

Germany—cheap-labored, long-houred Germany—seizes perhaps 6 per cent of the business, not more. It is worth explaining how she got even so much, and why she ought to be deprived even of that share in the future.

There was a time before 1899 when the rulers at Pretoria strove by every means, open and underground, to foster trade with Germany. * * * It was an artificial growth, fertilized by orders given with a special object from Pretoria and Johannesburg; its roots had no grip of the soil, and they have withered at once now the cultivator has gone and left them to the influence of crowding competition and fair play.

Ironware.—In enameled ironware, so vastly used in this country, where crockery can not be trusted to stand rough handling, Germany once held the field. Then the United States came in with a better article and knocked her out. Then the Staffordshire and Warwickshire maker introduced one better and heavier, and now, as the manager of Holt & Holt told me, buyers find more value in the 3s. (73 cents) article (British) than in the half crown (60 cents) American.

Crockery.—Makers in the potteries should put their heads together and create a cheap and good-looking china tea or coffee set, because that is the only line in earthenware in which the foreigner (German and Austrian) "has a show." Neatly packed in a gaudy box, these cups and saucers have a charm for the Dutch vrow in town on a buying expedition. The familiar "blue-lined" dinner ware and "white and gold" crockery is all British, and it has steadily improved its position for ten years past.

Clothing.—There is an illimitable market in the Transvaal and the Orange River Colony for men's cheap ready-made clothing. The Boer does not keep a tailor; all his garments are bought "off the shelf" at the country storekeeper's.

This is where German cheap labor comes in again. Trousers have been shown to me that cost in Hamburg f. o. b. 12s. 6d. to 14s. 6d. ($3.03 to $3.52) per dozen pairs complete. Add, say, 30 per cent, and they cost here 1s. 4d. to 1s. 10d. (32 to 44 cents) per pair, and sell at anything from 7s. 6d. ($1.82) upward.

Blankets.—Belgium has been having a cut-in fairly successful for Kaffir blankets—the native's bed and overcoat and general utility wrap. The article most in favor is two-faced—smooth on one side and having a kind of nap on the other, not unlike the moleskins made about Rochdale.

For ordinary blankets, nobody is in the same street with the British manufacturer. Shawls (and every colored woman in the subcontinent is swathed in a shawl) are eaten into by the Germans, because they send out an article more showy in color and a trifle lower in price. Todmorden mill owners should take the hint.

Furniture and vehicles.—We must have furniture, even in a new country, and all but 5 per cent of it is imported. Whence comes it? Go over any decent sort of house in Johannesburg and you find the drawing-room and dining-room suites come from London, the bedsteads from Birmingham, the carpets from Kidderminster, the linoleum from Scotland, the electric-light fittings from London, the cheap bent-wood chairs from Austria, the stoves from America, the cutlery from Sheffield, and the glass and earthen ware from Staffordshire.

The United States are untouchable in office furniture, especially the invaluable roll-top desk, because they have the forests of oak and the factories laid out for this express work. But what is the British carriage builder about that he lets the vehicle trade stay almost entirely in American hands?

Of course, the millionaire has his landau and dogcart from Long Acre, but these are but drops in the ocean. Every farmer has his Cape cart—that heavy but everlasting ship of the veldt. He may have a "spider" or light-framed buggy; he may have two of each. The hansom of South Africa is a species of victoria, carrying four passengers, and with a falling hood. Nearly all these (and particularly the buggies) come from America. Again, why? British firms angle for orders for half a dozen locomotives with great perseverance. What about the thousands of conveyances needed in every part of a country a thousand miles square?

TEA AND COFFEE IN INDIA.

The official statistics of the tea and coffee production of India are of peculiar interest this year, because they deal with industries which have reached a critical stage in their history. Unfortunately, while the tendency is for the tea trade to recover its position, the palmy days of coffee raising in this country seem to be past.

TEA.

It is only when the figures are tabulated that one can appreciate the enormous proportions the Indian tea trade has attained. Last year there were 524,767 acres under the hardy plant, producing 191,250,000 pounds of tea, giving employment to some 666,000 persons, and representing an invested capital of $54,000,000. About one-tenth of the production was in Dhera Dun, the United Provinces, the Kangra Valley in the Punjab, and the Travancore district in southern India. The other nine-tenths is grown in the two provinces of Bengal and Assam.

The period of greatest activity was in the years 1897 and 1898, when 67,000 acres were added to the tea-growing area. This tremendous expansion in the output, without any corresponding increase in the demand, bore its inevitable fruit in the glut which has in recent years brought prices down below a fair profitable level, and consequently a healthy reduction of the rate of progress set in. Last year there were only 2,284 acres added, and in the ordinary course of events a decrease in succeeding returns may be expected.

The price of tea in 1902, although higher than that of 1901, was lower than at any other time during the past thirty years. The ruling price at Calcutta during the public sale was about 14 cents a pound for broken Pekoe (probably the best quality of Indian tea), and unless there is a considerable advance in values, which is extremely unlikely, the poorest-yielding lands must fall out of cultivation.

The United Kingdom is still the greatest repository for Indian tea, taking nearly 160,000,000 pounds of the total production, though there was a decline of some 7,000,000 pounds from the year previous; it is difficult to say how much of the tea exported to London finds its way to America. Australia comes an extremely poor second, with 8,500,000 pounds. France and Russia are the only countries whose demand shows a promising development. The popularity of "Le five o'clock" has run the consumption in France up to 75,000 pounds a year.

India consumes only 5,500,000 pounds of home-grown tea and 3,000,000 pounds of foreign. The planters have neglected the Indian market in their anxiety to stimulate the demand from abroad. Canada, with its 5,000,000 inhabitants, consumes as much Indian tea as does the United States, with a population fifteen times as great; each consumed last year about 1,075,000 pounds.*

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* The imports into the United States of tea from British India, as given in our customs returns (Bureau of Statistics), amounts to 2,019,099 pounds, 4,374,778 pounds, and 3,093,864 pounds during the years 1899, 1900, and 1901, respectively.

COFFEE.

Southern India practically monopolizes the Indian coffee industry. The low prices caused by the competition of the Brazilian coffee (which represents three-fourths of the world's production) have played havoc with this trade in recent years, and the average production in the last quinquennium was under 20,500,000 pounds, as compared with 34,750,000 pounds in the preceding five years. This great falling off in the output is due rather to a diminished yield than to any reduction of acreage, for the extent under coffee is practically the same as in 1885, while the output is less than half.

The coffee producers have seen the price of their commodity fall for the last twelve years. In 1890, it was £5 6s. 2½d. ($25.63) per cwt. (112 pounds), and in 1900 it touched bottom level with £2 7s. ($11.67).

There is in this country a certain demand for tea—although small—and the progress of the experiments undertaken at the suggestion of the viceroy tends to show that it is capable of expansion. Indian coffee, on the other hand, has to find its purchasers entirely abroad, and so long as the foreign market is dominated by the low-priced Brazilian product, there is no great hope for the industry.

The English demand of 13,000,000 pounds is closely followed by that of France—11,250,000 pounds. The importance of this French trade leads planters to follow, with no little anxiety, the progress of the tariff negotiations. Mr. O'Conor, director-general of statistics to the government of India, says that the question is still unsettled, and the provisional arrangements under which the minimum tariff rate was applied to it were recently prolonged.

The quality of Indian coffee is good—so good that it is appreciated by the Arabs and Turks. It is not easy to determine how much of the 250,000 pounds of Indian coffee shipped to Arabia finds its way to Europe and America as the finest "Mocha."

WM. THOS. FEE,
Consul.

BOMBAY, *July 25, 1902.*

THE CROP OUTLOOK IN INDIA FOR 1902.

The monsoon rains gather in the southeast and break over the western coast of India in June, generally soon after the 10th, and it continues to rain for about three months. It is upon this rain that the plant life in India depends. The fall varies from 2½ inches at Hyderabad, Sind, to several hundred inches in the high mountain districts. At Bombay, the average fall is about 80 inches, but sometimes runs up as high as 125 inches. At this time it is about 24 inches, which is some 10 inches less than at the same time in 1900 and 20 inches less than in 1901.

This year the monsoon current has been weak, and after the rains first broke it cleared away, giving ground for much apprehension that the periodic rains would largely fail. However, the last official crop report, issued on June 9, 1902, records a further general improvement in the harvest outlook. As the result of a recent general rain, almost every part of India has received sufficient moisture for immediate purposes; but heavy rain will be needed in August and September to replenish the tanks and wells.

The areas where the deficiency is most felt are northern Gujerat and the Bombay Dekkan; elsewhere in the Bombay presidency, the condition is good.

Madras reports that the standing crops are generally fair, and some small harvests are yielding an average return. In a few districts in the United Provinces, more rain is needed for the rice; all the Punjab divisions have received enough, except Lahore and Amritsar, and the prospects of the standing crops are described as good.

In the Central Provinces, the lack of sufficient rain is still felt, except in Nimar and Damoh, and the Raipur and Balaghat districts are particularly affected. More rain is needed in the rice districts for transplanting and thinning operations. In Mysore and Berar, the harvest outlook is good everywhere; and in Hyderabad, Dekkan, the condition is satisfactory, though the fall in and around Hyderabad itself has been extremely light. Agricultural operations are generally in progress in Rajputana, and Malwa is the only part of central India which has not received good rain.

The improved condition of the country is shown much more clearly in the statistics relating to the relief work than in the vague terms of the official reports. The rush to the famine works has not only ceased, but has been converted into a considerable exodus. In the Bombay presidency alone, the numbers in receipt of aid have declined by 41,000, and taking the country as a whole, the total is smaller by 72,167.

Heavy rains have recently fallen on the Malabar coast and light showers over the Dekkan and the cotton districts of Gujerat, so that if there is a fair share of the late rain, the crop outlook is not discouraging.

WM. THOS. FEE,
Consul.

BOMBAY, *July 31, 1902.*

THE MANCHURIAN RAILWAY.

Under date of July 30, 1902, Commercial Agent R. T. Greener, of Vladivostock, transmits the following data in regard to the Manchurian Railway:

By the terms of agreement the shareholders were to be confined to Russians and Chinese, the gauge was to be 5 feet, and the work to be begun within twelve months from the signing of the agreement and completed in six years. At the end of eighty years the road was to become the property of the Chinese Government, with the proviso that China was not to be responsible for losses during this period and with the option of taking the road at the end of thirty-six years by paying the costs, debts, and interest; any surplus, after payment of shareholders, to be added to capital and deducted from cost of line to be paid by China. The Russian-Chinese Bank was organized to have charge of the finances. Work was commenced May 28, 1897, simultaneously from the east and the northwest, 110 versts (72.9 miles) from Nikolsk and 324 versts (214.8 miles) from the boundary of Manchuria. A branch line was begun early in the spring of 1898, 3 miles above Niuchwang, running east a distance of 17 miles, and completed in May, 1899. In October, communication was established between Dalny and Niuchwang. From that time work was pushed all along the line. Harbin became another Pittsburg; American locomotives, tools, and supplies were used at all points. The loss and delay to the road occasioned by the Boxer outbreak can hardly be computed, and when work was resumed it was under the protection of Cossack troops. In 1901, construction trains were running over all the sections and the whole system was open to temporary traffic in November, 1901. In December of the same year, a regular mail service was organized, the trip from Harbin to Port Arthur being made by an official in thirty-six hours. The road was formally opened to the public January 1, 1902. The committee of experts have estimated the total cost of the road up to January 14, 1902, to be 160,000,000 rubles ($82,400,000). The receipts from July 1 to November 9, 1901, as reported, were 1,447,441 rubles ($745,432). Passenger and baggage traffic figured at 188,286 rubles ($96,967); freight traffic, 955,379 rubles ($492,020); sundries and Government service, 383,776 rubles ($197,645).

A daily train is scheduled to leave Manchuria station for Vladivostock via Harbin (time, 112 hours) and for Port Arthur (time, 125 hours). There is an observation car on both the Government trains and also on the International Litoral Company's train. By autumn it is expected that there will be six of the former and three of the latter.

COMMERCE OF JAPAN IN 1901.

The following extracts are from the annual report of Consul-General E. C. Bellows, of Yokohama, which will appear in full in Commercial Relations, 1902:

The annual return of the foreign trade of the Empire of Japan for 1901 shows a healthy growth of commerce, the exports having been greater in value than for any previous year in its history, and the imports, which are still slightly in excess of the exports, being surpassed only by those of 1898 and 1900. Since 1895, the imports have continually exceeded the exports, and the decrease in the excess is very encouraging to the Japanese. Although the total value of the imports decreased only about 11 per cent as compared with 1900, the value of those purchased from the United States has decreased more than 31 per cent, so that we furnished last year only a little over one-sixth of the whole and are again outranked by both Great Britain and British India.

IMPORTS.

The principal imports into Japan from the United States are raw ginned cotton, kerosene oil—these two together making up more than half the value of the whole—and different kinds of machinery, engines, electrical apparatus, etc.

Machinery.—In electric-light apparatus, we are not holding our own as compared with 1900, though we still furnish over 60 per cent of the total imports of this commodity. With regard to fire engines and pumps, implements and tools of farmers and mechanics, locomotive engines, crane machinery, weaving machinery, and steam boilers and engines, the United States has made important gains in the value of her exports to Japan and, in all except the last, in the per cent of the total which her share represents. Of photographic instruments and apparatus, sewing machines, watches, condensed milk, and salted fish, our country has slightly increased its exports to Japan, although in each of these the total imports have decreased. The value of the telephones imported last year was about half as great as in 1900, and Belgium supplied more than half, the United States furnishing about 27 per cent of them, while in 1900 her proportion was 33 per cent.

Flour.—It has been ascertained that the soil and climate of the northern island of the Japanese group are well adapted to the production of wheat, barley, and similar grains, and a big flour-making company has recently been started in that part of the Empire. It is estimated that some 10,000,000 pounds of flour annually are now being turned out, and the company hopes in time to prevent the importation of American flour. Last year, the importations of flour from the United States amounted to more than 63,000,000 pounds, which is only about three-fourths as much as in 1900; but probably the falling off was due to stocks carried over. We have no important competitor in this commodity, but Australia sends five-eighths of the wheat shipped here, the total wheat import amounting to 11,500,000 pounds.

Alcohol.—About four-fifths of the alcohol imported last year came from America, this being the first year that she has been in the lead in this article.

Leather.—Our country still keeps the lead in sole leather, of which it furnishes about three-fourths, but in sales of other leather it is falling still farther than formerly to the rear. The total import of sole leather for the year under review decreased by 800,000 pounds, and that of hides and skins increased an equal amount, while other leather gained a very little.

Wire.—The importations of iron wire and small rods have fallen off more than two-thirds and that of telegraph wire one-third, while the interest of the United States in these commodities has decreased in still greater proportion.

Steel, iron, etc.—Of materials for bridges and buildings, the United States in 1900 sent almost two-thirds of the amount received in Japan; for 1901, she is credited with less than one-third, while Great Britain has advanced to more than half.

In "steel other than mild steel," steel-wire rope, brass and copper tubes, mercury, and nickel, Great Britain has the lion's share of the trade, and the United States is losing ground in all except steel other than mild steel and mercury. The imports of lead (pig, ingot, and slab) have steadily increased for several years, and the proportion of the United States has grown until last year it amounted to five-eighths of the whole.

Oil.—Nearly all the kerosene oil and much the larger part of the lubricating oil and paraffin wax imported come from America, while Great Britain furnishes most of the linseed oil. The importation of kerosene oil continues to increase, although it is believed that good petroleum veins exist in some parts of this and the northern island, and the Japanese are making constant efforts to extend the domestic production. Since 1899, there has been a gradual absorption of the smaller companies by the Takarada Oil Company, which now claims to have the greatest and richest area of oil fields, although the International surpasses it in thoroughness of equipment and in command of capital. The Takarada, which operates chiefly in Echigo Province, commands oil fields covering an area of 27,000 acres, in which are over 200 wells and boring machines, with a daily output of 52,000 gallons. There are now only three important oil companies in Japan.

Sugar.—Hongkong and Germany together furnish nearly half the sugar imported, and the other half is brought from many countries, among which Austria-Hungary, China, Dutch India, and the Philippine Islands are the most important. The Philippines increased their shipments by about 50 per cent as compared with 1900. This market for sugar is growing, and with the establishment of more settled conditions in the Philippines, the industry should be so developed as to supply half the demand here. The islands now supply about one-ninth, none of which is refined.

Paper.—More than half the fancy glazed paper, match paper, and packing paper imported into Japan comes from Germany, the United States doing very little in these lines. Great Britain leads in printing paper, with the United States and Austria-Hungary not far behind, the three together furnishing more than three-fourths of the entire importation. There are 11 paper factories in Japan and they are steadily increasing their output, which this year amounted to 103,926,000 pounds; while the total importation, which was less than half as much as last year, was 17,359,000 pounds. The native factories have formed an alliance to control prices, with a view to check sharp fluctuations. They do not produce ornamental paper, but manufacture printing paper, board paper, and wrapping paper, and the exportations of these almost equal in value the importations of paper of all kinds.

Cotton.—The cotton-spinning industry of Japan is experiencing many difficulties, which have been intensified during the past few weeks by the fall in the price of silver and consequent downward movement of the yarn market in China, unfortunately accompanied by a rise in the price of raw cotton. The ginned raw cotton is obtained principally from British India, the price being about 11 per cent lower than that of American cotton, which in 1901 constituted one-sixth of the amount imported by Japan.

Cotton manufactures.—Great Britain leads in supplying the various manufactures of cotton. The Japanese manufacture cotton crape and cotton flannel for export as well as for home use, and report fair profits in these lines, so that the industry is growing, although hampered by lack of sufficient capital and high rates of interest. Manufacturers can not equip mills with the latest devices because of this, and the stocks will not sell at par if the dividends are lower than 10 per cent.

Wool.—A little more than one-third of the wool imported by Japan comes from China, while Germany, Great Britain, and France are the leading countries in supplying the various manufactures of wool.

Flax and hemp.—Flax, hemp, jute, and china grass were imported to the aggregate value of more than $600,000, the Philippine Islands having nearly one-sixth of this trade. In linen tissues and flax or linen yarns, Great Britain has almost a monopoly.

Timber.—The value of the timber imports in 1901 was considerably less than in 1900, amounting to only $234,402, more than half of which was paid to the United States. Japan is obliged to import all the timber used in some parts of ships, and, as she is striving to extend her shipbuilding, there will probably be an increasing demand for certain kinds of timber.

Bicycles.—The United States has almost a monopoly of the sale of bicyles and tricycles, and these machines are very freely used by the Japanese in the treaty ports and along the lines of foreign travel, the imports last year amounting to $270,000. The wheels most readily sold cost from $16 to $25, and the retail dealers make a profit of from 15 to 20 per cent on wheels of late pattern. Automobiles are being shown, but there is as yet no market for them.

Cars.—The purchase of railway passenger cars was very much less in 1901 than in 1900 or in 1899, and almost all that were bought came from Great Britain, which also furnished most of the railway freight.

Cables.—The purchase of submarine telegraphic cables and underground telegraphic lines also fell off greatly as compared with the previous year, but the United States considerably increased its sales and now stands slightly ahead of France and Great Britain, while Germany has risen from the lowest place in 1899 to third in 1900 and first in 1901.

EXPORTS.

Tea.—The amount of tea exported from Japan remains almost constant, having been slightly more in 1901 than in 1900, but less than in 1899. The United States takes more than three-fourths of the entire quantity, and the removal of the American duty has been the source of much satisfaction to tea growers. At a recent convention, speeches were made in favor of organizing to agitate against the reimposition of the duty, should it be attempted next year, and to devise plans for increasing the annual yield and improving the quality. The outlook for the present year, as reported some weeks ago, was rendered very discouraging by unseasonable frosts, but a second crop of leaves has made its appearance, and the tea-firing houses are again busy.

Rice.—Almost every civilized country in the world buys rice from Japan, and the exports last year were double those of 1900, although less than in 1899. The value of the rice exported last year was about four-fifths that of the tea, these two being the principal unmanufactured vegetable products exported from Japan. Other vegetable exports are barley, ginseng, groundnuts, gallnuts, oranges, mushrooms, camphor, and potatoes, the Philippine Islands being the heaviest purchaser of the last named, while the United States ranked third in the amount of rice taken. The cold weather of the first weeks of May affected the young rice shoots, and the crop for this year is somewhat doubtful.

Fish, etc.—The exports of "shell and other fish," fish oil, and seaweed are steadily increasing, and last year amounted to more than $3,000,000. Much the larger part of this produce goes to Hongkong and China.

Silk.—Last year was an especially favorable one for the export of silk, the value of which constituted three-sevenths of the entire exports of the country; and it is noticeable that the increase was mostly in silk tissues, although the death of Queen Victoria in January and the assassination of President McKinley in September, by causing a widespread demand for mourning goods, was very unfavorable to the market for Japanese silk textiles. The United States was the heaviest purchaser of raw silk, and took 733 tons in excess of the highest quantity previously bought in any year, while France received more than two-thirds the entire export of waste silk. Japanese silk tissues find their market in many countries, the United States being the best customer for silk handkerchiefs and "kaiki," while China and Korea compete for the silk crape, the former taking more in value but the latter more by measurement. It was feared that the late frosts, which destroyed many mulberry leaves, would cause great injury to the silk industry, but present reports indicate a fair season.

Cottons.—Considerable quantities of cotton yarn and cotton tissues are sold to the neighboring countries of Asia and the Philippine Islands, but the amount is still far below that exported before the trouble in China. Hemp and cotton carpets find their best market in European countries and the United States.

Coal.—Coal to the value of $8,700,000 was exported, principally to China and Hongkong, this amount being considerably in excess of previous years.

Miscellaneous.—Fans, floor matting, paper lanterns, porcelain and earthenware, manufactures of wood, and tooth and other brushes are exports of which the United States is the largest purchaser, and manufactures of bamboo, lacquered ware, screens, and straw plaits find their best market in England; while clocks, timbers and lumber, furniture, looking-glasses, other manufactures of glass, jinrikishas, lamps, manufactures of leather, matches, and umbrellas are exported in considerable amounts to Asiatic countries. All except a few of these show an increase over previous years.

TRADE WITH THE PHILIPPINES AND HAWAII.

Both the imports from and the exports to the Philippine Islands were greater than in either 1899 or 1900. The total exports to these islands were valued at $1,285,179.80 and the imports therefrom at $1,484,553.68.

The total exports to Hawaii amounted to $947,549.57, this being an increase of nearly $300,000 over 1899, the highest previous year. No imports from Hawaii are found.

SHIPPING AND SHIPBUILDING.

For years, the policy of Japan has been directed with the view to building up a strong navy and merchant marine. Her position in the East is, in many respects, analogous to that of her ally, Great Britain, in the West, and her aspirations and opportunities both point to the sea as furnishing her best defense in case of war and a profitable vocation for her sons in times of peace. With this object, the Government is planning regular and systematic additions to the strength of the navy, and is seeking the best means for the encouragement of shipbuilding. High ship subsidies have long been paid, and any plan which promises to promote the establishment of iron-manufacturing plants and other industries necessary to shipbuilding receives careful consideration. In 1892, about one-thirteenth of the exports and one-eighth of the imports of Japan were carried in Japanese vessels; in 1901, its shipping had increased so much that three-eighths of the exports and one-third of the imports, or a tonnage considerably in excess of the total imports and exports of 1892, were conveyed in native vessels. The tonnage of Japanese merchant steamers entering Japanese ports in 1901 amounted to 3,861,659, and this was surpassed only by the British ships, with a tonnage of 4,080,583. Germany and Russia both exceed the United States, from which country 175 ships, with a tonnage of 404,724, entered Japanese ports.

One of the largest steamship companies in Japan is the Nippon Yusen Kaisha (Japan Steam Mail Company), which has lines of boats making regular trips to ports in Europe, America, Australia, British India, China, and Korea. At a recent general meeting of the company, it was proposed to assist in the establishment of a new route by the Hunan Company of China, the object being to secure feeders for the steamers at the Shanghai terminus.

While striving to build up their shipping, the Japanese are not unmindful of the necessity for good harbors. Yokohama is the most northerly port in the Empire, and Yedo Bay, on which it is situated, forms an ideal natural harbor, much resembling San Francisco Bay in its narrow mouth and wide expanse. A substantial breakwater renders still more secure the upper part of the bay, which is being continually improved by dredging and the extension of dock facilities. A dock is also being built at Hakodate, on Tsugaru Strait, which is between the principal island and the northern one. It is expected that this will be completed within the year, and Hakodate will probably become a naval repair station for Japanese men-of-war and such foreign vessels as may desire to come in. During the past three years, the number of vessels passing through the Tsugaru Strait has more than trebled, some boats which formerly traveled by the Inland Sea and coaled at Nagasaki or Moji having latterly preferred to take the northern route and coal at Mororan. Those who favor this route claim that the current here is more favorable, that there is less danger of encountering stormy weather, and that the voyage is shortened.

ECONOMIC.

As stated at the beginning of this report, the imports for 1901 were slightly in excess of the exports, the difference being $1,726,616.60. The movement of gold and silver coin and bullion corresponded very closely to this, the exports being in excess of the imports by $1,537,998. Besides the money which passes through the usual course of trade, of which records are kept, tourists bring into the country no inconsiderable amount, of which there is no account. However, a commissioner connected with the customs service made investigations last year, from which he estimated that 185,000 tourists visited the islands during that period, and it has been computed that at least $20,500,000 must have been brought into the country in this way. As this allows a little less than $111 to each traveler, the estimate is certainly not too high. Another element which enters into consideration in the movement of specie is the matter of foreign loans, many Government bonds and other securities being held in London. That the financial condition of the country is improving is indicated by the gradual lowering of rates of interest and the substantial increase of the gold reserve in the Bank of Japan. The question of the introduction of foreign capital for industrial and commercial undertakings is continually agitated, but thus far with little apparent result.

The total exports of the country show a gain of 23 per cent as compared with the preceding year, and a gain of 17 per cent as compared with the highest year previously known. This gain is not due to exceptionally favorable circumstances in one or a few industries, but is distributed along all lines, very few having fallen at all below former standards, and the greater number having shown decided advances. This seems to indicate a healthy growth, which it may be hoped will be permanent.

The figures for the total trade of Japan and for the commerce with the chief countries follow:

Total imports	$127, 396, 689
Total exports	125, 670, 072

Country.	Exports.	Imports.
United States	$36,010,060	$21,299,176
Great Britain	5,718,286	25,186,742
China	21,376,938	13,573,979
Hongkong	20,809,750	5,548,610
Germany	2,615,033	14,103,410
France	13,583,284	1,868,908
British India	4,809,482	21,304,392

CAMPHOR MONOPOLY IN CHINA.

Consul John H. Fesler, of Amoy, under date of July 10, 1902, reports the granting of a monopoly of the camphor trade in the province of Fukien, including the consular districts of Fuchau and Amoy, to a Japanese subject. Camphor trees are cultivated in the interior by the Chinese, but they have never engaged in the manufacture of camphor until last year, when an American firm made contracts to buy their camphor and the goods purchased were brought to Amoy under a transit pass issued by the imperial maritime customs. Several Japanese firms followed this initiative. Later a Chinese firm in Amoy bought the monopoly of the trade from the viceroy. This firm, owing to its scant capital and defective process of steaming, heating, etc., failed, and a Government camphor board was then established and an agreement made to employ a Japanese expert to instruct the Chinese in the manufacture of camphor. The granting of monopolies is forbidden by existing treaties with China, and the report of the present camphor monopoly is denied by the Japanese minister. In any case, it is doubtful whether the Japanese intend to develop the camphor industry, their object being to control the price in order to make their Formosa industry more profitable. Camphor can not be manufactured as cheaply here as in Formosa, where they do not have to pay for the trees. A copy of the agreement with the Japanese camphor expert and of the regulations of the Fukien camphor board, as also of the taotai's dispatch to the consul, are inclosed. The following extracts are taken from the regulations:

> As soon as these regulations shall have been published, no person or persons shall be permitted to own furnaces and boil camphor. Persons furnishing their own capital and wishing to engage in the collection of camphor must obtain a written permit from the board. All camphor manufactured, as well as the residuum, shall be brought to the board, who will buy them at a reasonable price and then submit them to the expert for examination. Qualified agents will examine trees, settle their prices, and close the deal, but owners of trees can not be forced to sell. As the camphor trees are all in the interior, persons applying for permits to collect camphor must necessarily be the subjects of China; no representative or subject of any foreign government or natives of Formosa shall be permitted to avail themselves of the privilege. The board shall issue passes for camphor brought from the interior to a treaty port. The cargo shall be subject to examination at the barriers en route, but shall pay no likin—only the customs export duties and charges in accordance with existing regulations. Camphor exported at other than a treaty port shall be confiscated. Persons employed in the manufacture of camphor shall be subject to the supervision and discipline of the board.

The duties of the expert are stated in the agreement to be the superintending of collecting, heating, steaming, classifying, etc., of its camphor. He shall also undertake to guarantee the sum of $200,000 Mexican ($83,000) as running capital from some Japanese company, without interest on the loan. The contract is for six years from the day on which it is signed. At the expiration of the time, all factories, buildings, machines, furnaces, etc., belonging to the board shall be turned over to the company at the cost price, except such properties as shall be found in the interior, and it is further provided that the company shall only dispose of them by sale, but shall not own them. The balance of the capital shall be returned, the board being in nowise responsible for the money expended. On all camphor manufactured, the expert shall pay a sum of $7 Mexican ($2.90) to the Chinese Government as a tax per picul (133⅓ pounds). The tax shall be $1 Mexican (41.5 cents) for every $10 Mexican ($4.15) additional price. This tax shall be paid to the controller and shall be applied toward the Government expenses in the Fukien Province. The object of manufacturing camphor being to secure revenue for the Government and to give employment to the people, should any foreign merchant establish factories in the treaty port and there collect camphor out of the trees he shall have bought, he is permitted by the treaties to do so and shall not be interfered with.

MINING IN BRITISH COLUMBIA.

Mr. George A. Ohren, United States consular agent at Rossland, British Columbia, reports as follows:

Nine mines are now shipping to the smelters in Washington and British Columbia. A few months ago, only two of these were shipping, and that in small quantities. The labor troubles have now been adjusted, and the mines are all working. The following table shows the average shipment for one week:

Mine.	Quantity.	Value.
	Tons.	
Le Roi	4,022	$52,286
Le Roi No. 2	420	5,460
Center Star	1,350	17,550
War Eagle	900	11,700
Giant	155	2,015
Velvet	150	1,950
Total	6,997	90,961

A few years ago, the mines around Rossland could not afford to ship ore valued at less than $16 per ton. The charges for freight and smelter treatment amounted to $14. Later, these charges were decreased to $11 per ton, and about a year ago the smelters reduced the rate for freight and smelting to $6.50 per ton. A recent contract made by the War Eagle and Center Star mines with the smelter enables them to ship ore valued at $5 per ton, although they ship a quantity of high-grade ore with the low grade. The terms of the contract between these mines and the smelter are $4.50 per ton for freight and treatment. This is most important for the future prosperity of Rossland, the majority of the ore mined around the city being of low grade. With these cheap rates for freight and smelting, there are hundreds of mines in the immediate vicinity of Rossland which will become shippers almost immediately.

Every effort is being made by the managers of the mines to reduce the cost of concentration and refining of the ores. The Elmore process* is being introduced, and great hopes are entertained of the ultimate success of this system. It is understood that the owners of the Elmore patents have expressed their willingness to erect a plant, or to sell one of their plants to the mine owners.

There is a large demand for skilled miners. Almost any man who is a thorough, practical miner can obtain employment in Rossland or vicinity, and it seems probable that the demand for such labor will constantly increase.

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*See article on p. 382 of this issue.

A new smelter is being erected near Grand Forks, which is expected to handle 1,000 tons of ore per day. It is said that it will be in operation within the next six months, and that several improvements in smelting will be introduced.

It will pay dealers in mining machinery in the United States to send representatives to the Kootenai country to advertise their manufactures. There is now a good opportunity to sell mining machinery at Rossland, in the Trout Lake district, and in other portions of the Kootenai.

Manufacturers of giant powder, dynamite, hardware, sanitary supplies, steel cars, tramways, and all productions connected with smelters or mines should also be represented.

The food products of the United States find a market in great variety in the Kootenai district. There are a number of wholesalers whose representatives visit the district periodically, but it seems to me that the business could be increased by a little more effort. There is a market for hardware, woodenware, crockery, glass, plumbers' supplies, groceries, shoes, clothing, machinery, bar supplies, liquors, pool and billiard tables, printers' goods, stationery, drugs, furniture, leather goods, harness, wagons, carriages, bicycles, automobiles, fur garments, skates, sleighs, and sporting supplies. Freight rates to Rossland and other points in the Kootenai are unusually high, but the scale of wages paid is liberal, and generally the miners desire the best article. It is understood that in most lines the manufactures of the United States are superior to those of Canada, and they command a more ready sale and better prices.

L. EDWIN DUDLEY,
VANCOUVER, *September 11, 1902.* *Consul.*

NEW PROCESS FOR ORE CONCENTRATION.

A new process for concentrating ores by the use of oil is being introduced here by a company known as the Canadian Ore Concentration, Limited, London, England. Ernest E. Sawyer, chairman of the directors, recently visited the mines in this district and thoroughly explained the operation of the process to the owners. The increased percentage of recovery of values and the higher grade of concentrates produced by the "oil process," when compared with the results obtained by water-concentration methods, clearly demonstrates the superiority of the former.

The ores of the mines in this vicinity contain copper, gold, and silver; lead, silver, and gold; gold, copper, silver, and lead; and many other combinations. All the trials were successful. Ore from an important property on the British Columbia coast, containing 2.2 per cent of copper, showed by water concentration a loss ranging from 30 to 58.6 per cent, mainly arising from float mineral, the surface of the water being covered with a scum of metallic mineral which would not sink. By the "oil process," the loss was only from 1 to 7 per cent. The extraction was therefore 99 to 93 per cent of the assay value.

The process, called the "Elmore" process, is described as follows:

The ore having been reduced to a freely flowing pulp (oil and suitably pulverized ore), passes directly from the mill into the open end of a horizontal rotating drum, inside of which is fixed a helix with cross blades or buckets which lift up the pulp to a certain height and drop it again, at the same time propelling it forward to the opposite end of the drum, thus keeping the pulp in constant agitation for the few seconds which are occupied in its passage. With the pulp is also admitted a small quantity of thick, sticky oil, known as "summer drak oil." This is of course subjected to the same agitation as the pulp. It exercises the remarkable property of picking up and holding the mineral that is floating about or suspended in the pulp in minute particles. It does not appear to have any effect whatever upon the particles of rock with which it comes in contact.

The oil and pulp automatically discharge from the other end of the drum into a pointed box, or spitzkasten, in which the tailings or rock at once settle down and pass off with the water at the bottom, while the oil rises to the top and carries with it practically all the values which the ore contained. From the top of the pointed box, the oil, with its mineral, flows off into a specially constructed centrifugal machine, where the oil is extracted from the mineral and is at once ready for reuse.

For close extraction, three mixing cylinders are sometimes used, the pulp passing from one to the other and receiving fresh streams of oil. A second centrifugal machine is also found desirable below the first, to further extract the oil and water from the concentrates. The concentrates are left in the machine practically free from oil.

The process was first tried in the laboratory, then on a small working scale, and then with a plant erected at Gladsir Mine, Wales, capable of treating about 50 tons of ore per week. After a lengthened trial of this plant, it was replaced by a much larger one, which treats 250 tons per week. The tests gave a recovery by oil of 90 per cent, as against 40 per cent by water obtained by the newest style of Frue Vanners.

COST OF WORKING AND PROFITS.

The initial cost of the machinery is small as compared with plants of equal capacity under any other process. A plant of 4 units, capable of treating 100 tons of ore per day of twenty-four hours, costs f. o. b. London, exclusive of power plant and crushing apparatus, about £2,200 ($10,706). The crude petroleum residuum, of which little is lost, costs only a few cents per gallon, according to place of delivery. The cost of working the plant necessarily varies according to the locality and local conditions, but in many cases will be very moderate, comparing favorably with water concentration.

It is proposed to grant licenses for the use of the process, and to fix charges at a low rate on the product of the ore treated or on each unit of plant.

OIL REQUIRED FOR ORE CONCENTRATION.

The oil so far found most suitable for the purpose of oil concentration is known in the trade as summer drak oil (Pennsylvania). Its specific gravity is 0.885, its flash point 0.46 to 0.48, its cold test 0.45 to 0.5, and its viscosity at 100° F. in two hundred seconds.

It is important to keep in mind that with a given viscosity, the lower the specific gravity the better. In other words, if we can find an oil with the same viscosity as above, with a specific gravity of, say, 8, it would be far better for the process.

COST OF OIL CONCENTRATION PLANT.

One unit* costs about	$1,700
Separators cost	2,200

A set of separators is sufficient for 4 units; therefore, a set of 4 units, to treat 100 tons per day, would cost $6,800, which, with the separators, would make a total of $9,000.

As an instance of the commercial utility of the process, the results obtained from ore from one of the best-known mining properties in Canada (the Le Roi) may be cited. The treatment of the dump ore, containing one-half of 1 per cent of copper, showed that about 15 tons could at a small cost be concentrated into 1 ton containing 6 per cent of copper, together with a high recovery of gold and silver.

A report issued last December gave the cost of smelting Le Roi ore as $6 per ton (I believe it is about $4.50 per ton at this date) and as, by the use of this process, only 1 ton out of 15 tons would have to be smelted, the saving is self-evident.

The more finely the metallic mineral is disseminated in an ore (especially when consisting of tender sulphurets), the greater is the percentage of loss by water concentration. These losses, which it has not been found possible hitherto to avoid, are greatly reduced by this process, the finest and lightest float sulphuret, containing gold, silver, or copper, being readily taken up and retained by the oil.

It is said that plants have been ordered for mines in England, Wales, Sweden, and Norway.

The process appears to be specially applicable to low-grade sulphide ores, especially such as have a tendency to slime when crushed, and for treating tailings from richer ores. Experiments seem also to have demonstrated the feasibility of separating, at a small cost, sulphides, such as copper pyrites, from oxides, such as magnetite, etc.

Much of this valuable information has been given me by Mr. G. H. Master, one of the agents for the Spitzee Mines, Rossland, British Columbia.

For further information, parties interested should write to M. T. Wigham, 826 Salisbury House, London Wall, E. C. The process is patented in the United States and Canada.

G. A. OHREN,
Consular Agent.

ROSSLAND, *September 12, 1902.*

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* One unit deals with 25 tons per every twenty-four hours.

PEAT DEVELOPMENT IN ONTARIO.

Several years ago, I wrote a report on the peat development in Ontario* that, if judged by the requests for more information received by me from all over the world, must have been of widespread interest. Hundreds of thousands of dollars have been expended during the past few years in experiments by the different companies in the Province for the perfection of machinery to turn out a fuel that will compete with coal. The peat plant known as Victoria Road, near Lindsay, Ontario, has alone spent $60,000 the past year in completing its machinery, but the result is not yet satisfactory.

The Ellice Peat Company, successors to the Stratford Peat Company, near this city, have added a new machine known as an artificial drier. Under the old process, the bog was cut and sun dried. With the new machine, the crude peat is run through the apparatus as fast as dug from the bog. Part of the moisture is evaporated by the heat of the process and the balance removed by the immense pressure the material undergoes, until it drops from the machine in cubes, ready for the market. This process of converting the raw material into marketable fuel is a great improvement over the old method, but further improvements are expected.

The whole question of making the inexhaustible beds of bog commercially valuable lies in the drying process. The genius who will invent a machine to satisfactorily extract the moisture from crude peat will not only make a fortune, but will be a public benefactor.

Thus far, the nearest solution to the problem lies probably in the machine invented by Mr. Dobson, now in use at his peat works at Beaverton, near Lake Simcoe, in northern Ontario. This machine consists of a press, drier, and spreader, and is a most ingenious contrivance, for it cuts, pulverizes, and spreads the material at the same time. This reduces the moisture 50 per cent, and the balance is taken out by the drying process. The machinery in operation at this plant has a capacity of 20 tons a day. The bogs are 3 miles from a railroad, and yet the demand for the fuel is such that it brings $3.25 a ton at the plant and is retailed at Toronto at $4.25. The plant near Stratford now has a daily capacity of 25 tons and a ready sale for all the fuel it can produce. It is run night and day, with a view to supplying the demand caused by the scarcity of hard coal.

Canada annually consumes nearly 3,000,000 tons of anthracite coal, all of which comes from Pennsylvania. Most of this is delivered during the summer months. The prolonged strike has changed the situation to such an extent that this summer no coal was delivered, and a serious fuel famine confronts the people of this latitude. This condition of affairs has given a tremendous impetus to the manufacturing of peat for fuel all over the Province, and will probably lead to the perfection of inventions, so that this crude bog will, in course of time, be the leading fuel and to a large extent take the place of hard coal.

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*Advance Sheets No. 530 (September 16, 1899); Consular Reports No. 230 (November, 1899).

A. G. SEYFERT,
Consul.

STRATFORD, *September 5, 1902.*

SUGAR PRODUCTION IN CUBA.

Minister H. G. Squiers transmits from Habana, August 28, 1902, the following comparative statement of exports and stocks of sugar on July 31, 1901 and 1902:

Ports.	1901.		1902.	
	*Bags.**	*Tons.*†	*Bags.**	*Tons.*†
Exported.				
Habana	314,985		249,367	
Matanzas	575,191		354,914	
Cardenas	603,532		427,237	
Cienfuegos	740,354		767,150	
Sagua	262,270		275,137	
Caibarien	176,489		156,431	
Guantanamo	246,242		230,211	
Cuba	35,432		62,544	
Manzanillo	127,496		140,180	
Nuevitas	67,030		133,700	
Gibara	63,090		276,838	
Zaza	8,146		15,533	
Trinidad	42,883		7,850	
Total	3,264,141	466,306	3,097,092	442,442
On hand.				
Habana	316,962		644,992	
Matanzas	120,185		576,355	
Cardenas	211,361		684,512	
Cienfuegos	43,941		110,991	
Sagua	16,936		149,688	
Caibarien	55,230		202,200	
Guantanamo	3,500		72,307	
Cuba	10,661		6,940	
Manzanillo			6,000	
Nuevitas			5,750	
Gibara	7,500		42,100	
Zaza	8,821		8,003	
Trinidad			59,204	
Total	795,097	113,585	2,533,042	361,863
Total exported and on hand		579,892		804,305
Add domestic consumption for 7 months		20,900		22,341
Total		600,791		826,646
Deduct old stock on hand January 1		523		19,873
Received in ports up to July 31		600,268		806,773

* Bags of 320 pounds.

† Tons of 2,240 pounds.

QUARANTINE SERVICE IN CUBA.

The Department has received from Minister H. G. Squiers, of Habana, August 23, 1902, copies of Executive decrees reorganizing the quarantine service in Cuba, by which, the Government claims, there is a saving of about $80,000 per year in the cost of administration. The decrees (translated) read:

DECREE NO. 97.

By virtue of the authority given me by the constitution, and in conformity with the recommendation of the Secretary of Government, I have decreed the following:

ARTICLE I. The service now known as quarantine service of the island of Cuba shall be called in the future the maritime health service of the Republic of Cuba.

ART. II. The said service shall be reorganized in the following manner:

Maritime health service of the Republic of Cuba.

Description.	Salaries and other expenses.	
	Monthly.	Annually.
Port of Habana.		
Personnel:		
One first doctor	*$200.00	$2,400.00
One second doctor	166.66	2,000.00
One third doctor	150.00	1,800.00
One assistant	100.00	1,200.00
Two sanitary guards (at $40 each)	80.00	960.00
Office:		
One chief clerk	100.00	1,200.00
One clerk	50.00	600.00
One servant	25.00	300.00
Total	871.66	10,460.00
Material:		
Printing and office supplies (island)	100.00	1,200.00
One telephone	6.00	72.00
Coal	120.00	1,440.00
Laundry	10.00	120.00
Repairs and vessel careening (once only)	....	200.00
Disinfectant and drugs	50.00	600.00
Flags for the service throughout the island	25.00	300.00
Total	311.00	3,932.00
Launch "Security:"		
One engineer	75.00	900.00
One master	70.00	840.00
One sailor	30.00	360.00
One fireman	30.00	360.00
Total	205.00	2,460.00

* Values are expressed in Cuban currency. At present exchange, 1 peso is equivalent to about 60 cents United States gold.

Maritime health service of the Republic of Cuba—Continued.

Description.	Salaries and other expenses.	
	Monthly.	Annually.
Port of Habana—Continued.		
Launch "Waldo:"		
One engineer	$75.00	$900.00
One master	50.00	600.00
One sailor	30.00	360.00
Total	155.00	1,860.00
Quarantine station at Mariel:		
One steward	70.00	840.00
One carpenter	40.00	480.00
One night watchman	35.00	420.00
One boatman	30.00	360.00
Unforeseen expenditures	35.00	420.00
Total	210.00	2,520.00
Total for port of Habana		21,232.00
Port of Veracruz.		
Personnel:		
One doctor	150.00	1,800.00
One clerk	50.00	600.00
Total	200.00	2,400.00
Supplies:		
Installation of office		100.00
Journeys and investigations	70.00	840.00
Printing and office supplies	30.00	360.00
Total	100.00	1,300.00
Total for port of Veracruz		3,700.00
Port of Matanzas.		
Personnel:		
One doctor	125.00	1,500.00
One clerk	50.00	600.00
One servant	20.00	240.00
Total	195.00	2,340.00
Steam launch and plant:		
One engineer	70.00	840.00
One master	50.00	600.00
Two sailors (at $30 each)	60.00	720.00
Total	180.00	2,160.00
Supplies:		
Coal	25.00	300.00
Repairs and maintenance	25.00	300.00
Total	50.00	600.00
Total for port of Matanzas		5,100.00
Port of Cardenas.		
Personnel:		
One doctor	125.00	1,500.00
One servant	25.00	300.00
Total	150.00	1,800.00
Port of Sagua.		
Personnel (one doctor)	70.00	840.00
Port of Caibarien.		
Personnel (one doctor)	50.00	600.00

Maritime health service of the Republic of Cuba—Continued.

Description.	Salaries and other expenses.	
	Monthly.	Annually.
Port of Nuevitas.		
Personnel:		
One doctor	$100.00	$1,200.00
One servant	25.00	300.00
Total	125.00	1,500.00
Steam launch:		
One engineer	70.00	840.00
One master	50.00	600.00
One sailor	30.00	360.00
One fireman	30.00	360.00
Total	180.00	2,160.00
Disinfection launch (one sailor)	30.00	360.00
Supplies:		
Renewals and repairs	35.00	420.00
Coal	40.00	480.00
Water	25.00	300.00
Total	100.00	1,200.00
Total for port of Nuevitas		5,220.00
Port of Gibara.		
Personnel (one doctor)	70.00	840.00
Port of Banes.		
Personnel (one doctor)	50.00	600.00
Port of Puerto Padre.		
Personnel:		
One doctor	50.00	600.00
Boat rental	20.00	240.00
Total	70.00	840.00
Port of Baracoa.		
Personnel (one doctor)	75.00	900.00
Port of Samá.		
Personnel (one doctor)	50.00	600.00
Port of Santiago de Cuba.		
Personnel:		
One first doctor	150.00	1,800.00
One second doctor	120.00	1,440.00
One clerk	60.00	720.00
One servant	30.00	360.00
Total	360.00	4,320.00
Steam launch		
One engineer	70.00	840.00
One master	50.00	600.00
Two marines (at $20 each)	40.00	480.00
Total	160.00	1,920.00
Supplies (steam launch):		
Repairs and maintenance	40.00	480.00
Incidental expenses	40.00	480.00
Total	80.00	960.00
Total for port of Santiago de Cuba		7,200.00

Maritime health service of the Republic of Cuba—Continued.

Description.	Salaries and other expenses.	
	Monthly.	Annually.
Port of Guantanamo.		
Personnel:		
One doctor	$100.00	$1,200.00
One clerk	25.00	300.00
Total	125.00	1,500.00
Supplies:		
Office rent	10.00	120.00
Rental of one boat	15.00	180.00
Total	25.00	300.00
Total for port of Guantanamo		1,800.00
Port of Manzanillo.		
Personnel:		
One doctor	100.00	1,200.00
One clerk	25.00	300.00
Total	125.00	1,500.00
Port of Daiquiri.		
Personnel (one doctor)	50.00	600.00
Port of Cienfuegos.		
Personnel:		
One first doctor	150.00	1,800.00
One second doctor	120.00	1,440.00
One clerk	45.00	540.00
One servant	25.00	300.00
Total	340.00	4,080.00
Steam launch:		
One engineer	70.00	840.00
One master	50.00	600.00
Two sailors (at $30 each)	60.00	720.00
Total	180.00	2,160.00
Supplies:		
Ship careening and repairs	30.00	360.00
Coal	25.00	300.00
Miscellaneous expenditures	15.00	180.00
Total	70.00	840.00
Total for port of Cienfuegos		7,080.00
Port of Casilda.		
Personnel (one doctor)	50.00	600.00
Port of Santa Cruz del Sur.		
Personnel (one doctor)	50.00	600.00
Port of Tunas.		
Personnel (one doctor)	50.00	600.00
Miscellaneous.		
Incidental expenses of the general service		4,148.00
Grand total per annum		66,400.00

ART. III. The chief of the service will be appointed by the President of the Republic, on the recommendation of the Secretary of Government. The Secretary of Government will appoint all other officers and employees of the service.

ART. IV. The Secretary of Government will issue such orders and instructions as may be necessary to enforce the provisions of this decree.

PALACE OF THE PRESIDENT, *Habana, August 4, 1902.*

T. ESTRADA PALMA.

DIEGO TAMAYO,
Secretary of Government.

DECREE NO. 100.

By virtue of the authority given me by the constitution, I have ordered the following:

ARTICLE 1. Hereafter, the chief quarantine officer shall be known as chief of the maritime health service of the Republic.

ART. 2. The office of the chief of the maritime health service of the Republic of Cuba will be organized as follows:

Personnel:	Annual salary.
One chief of the service	$3,600
One chief clerk	1,500
One paymaster and treasurer	1,200
One clerk	600
One messenger and porter	300
Total	7,200
Supplies	300
Total	7,500

ART. 3. The Secretary of Government will issue the necessary orders and instructions to secure the enforcement of the above decree.

HABANA, *August 4, 1902.*

(Signed.) T. ESTRADA PALMA.

DIEGO TAMAYO,
Secretary of Government.

FOREIGN INSURANCE COMPANIES IN CUBA.

The Department has received from Minister H. G. Squiers, of Habana, the following extract from a letter by Fernando M. Vidal, formerly General Wood's legal adviser, on the subject of requirements for foreign insurance companies doing business in Cuba:

Foreign insurance corporations are permitted to transact business in Cuba in accordance with the laws of the place of organization, in so far as their capacity to make contracts is concerned, and in accordance with the provisions of the code of commerce relating to the establishment of their houses, their business transactions, and the jurisdiction of the courts. The preliminary requirements are:

1. Registration in the commercial registry, which consists in filing in the said office a statement showing (*a*) the corporate name or title; (*b*) the nature of the business proposed to be conducted; (*c*) the date when it proposes to commence operations; (*d*) its domicile—*i. e.*, location of its principal office and branches; (*e*) a

certified and duly authenticated copy of the charter or certificate of incorporation and the by-laws, with a certificate of the Cuban consul, if any, or due proof that the corporation is incorporated according to the laws of the place of its establishment; (*f*) the general powers of the agents in charge of the branch office.

2. A deposit in cash or securities, after approval by the Secretary of Finance, in the treasury of the island, according to the following schedule: Life-insurance companies, $25,000; casualty, $25,000. When this deposit is made and approved, the fact is officially published and the company is duly authorized to do business and thereafter pays no further license fees for that purpose, provided that the capital stock is issued abroad, but is liable to general taxes based upon the amount and nature of the business transacted.

NEW STEAMSHIP LINES TO MEXICO.

PROGRESO-NEW YORK LINE.

The Mexican Government has granted a concession to José Gabriel Escalante, of Progreso, Yucatan, for the establishment of a line of steamers, to be called the "Yucatan Steamship Line," to ply between Progreso and New York, with the privilege of calling at Veracruz, Tampico, Galveston, New Orleans, and Mobile. The concessionary is authorized to organize a company and the vessels employed must be owned by the concessionary or the company, or chartered for at least six months at a time. The Mexican mail will be carried free of charge, in compensation for which the vessels will be entered and cleared at any time, day or night, except national holidays. The owners of this line are authorized to have their own coaling depots, either on land or pontoons, in the ports where their vessels touch. It is expressly stipulated that the concessionary or the members of the company shall be considered Mexican, and shall be subject to Mexican laws only. The term of this agreement is for three years.

LINE TO THE UNITED STATES AND EUROPE.

Another agreement recently entered into by the Mexican Government was with the Tabasco-Chiapas Trading and Transportation Company, of Frontera, Tabasco, for the establishment of steam navigation between Mexican Gulf ports and one or more American ports, Europe, and South America, and also in the coastwise trade between Mexican ports. Vessels must be owned by the company, or, if chartered, the contract must be for not less than six months. Mexican mail will be carried free of charge, in compensation for which the company will enjoy certain privileges, such as the entering and clearing of their vessels at any time, day or night, except national holidays, reduction of 30 to 35 per cent in tonnage dues, etc.; and in compensation for the usual privileges reserved by the Government, the vessels of this company will pay only 50 per cent of the charges of the health officer; the stock of the company will be exempt from all federal taxes except such as are required in the way of revenue stamps; and all vessels belonging to this company under the Mexican flag will enjoy the same privileges as any other Mexican vessels. The company is authorized to employ foreigners as masters and chief engineers on the vessels, whenever it is impossible to fill the posts with Mexicans, provided such officers will pass an examination and be qualified under Mexican law. The company may establish its own coaling depots, on land or on pontoons, and repair shops at such port or ports as may be found necessary and convenient; and make contracts with established steamship lines or new ones to promote direct interoceanic traffic, and with railroads for direct transportation to all parts of the Republic.

W. W. CANADA,

VERACRUZ, *September 2, 1902.* *Consul.*

PROMOTION OF EXPORT TRADE IN MEXICO.

Consul W. W. Canada transmits from Veracruz, September 6, 1902, a newspaper clipping in regard to the promotion of the export trade, as follows:

> The Mexican Commercial Commission will depart during the coming week on its long journey through the Republics of South and Central America. The samples which the commissioners will take with them include:
>
> Sacks, binding twine, cordage, matting, etc., made from henequen fiber; silk, cotton, and linen rebozos from Leon, State of Guanajuato; silk hand-made rebozos, from the town of Santa Maria, State of San Luis Potosi, said to be the finest in the country; hosiery and underwear of cotton flannel from Mexico City, Celaya, etc.; also sewing thread put up to resemble the product of the Scotch mills; colored cotton braid for shoe tags and similar purposes, manufactured in Mexico City.
>
> The array of cotton goods is really remarkable. All the chief factories at Puebla, Mexico City, Orizaba, etc., contribute, and the samples sent by each are substantially the same, though, in general, each of the factories is also represented by a given specialty. The goods include mantas, bleached and unbleached; drills, damasks (alemaniscos) for tablecloths, etc.; percales and prints in every style, some of the patterns being very tasteful; dress goods, with silk finish, dress goods, with velvet finish; men's suitings, almost undistinguishable from woolen goods; muslins, checks, twills bombazines, organdies, vichy cloth, cotton flannel; also cotton handkerchiefs, towels, yarns, etc. There are further sent crackers and Italian pastes; cigars and cigarettes; woolen suitings and other woolen goods; silk rebozos, silk thread, etc.; an exquisite variety of drawn work from Aguas Calientes; shoes manufactured in Mexico City, Leon, and Saltillo; charro hats; steel rails from the newly started steel foundry of Monterey; whisky and other spirits; cotton hosiery from Guadalajara, Jalisco; all kinds of soap and perfumes from Guadalajara; and beer from the brewery at Orizaba.

The commissioners undertake their journey in a strictly official capacity. They will carry with them the Government's credentials and the Government is paying the bulk of the expenses, though the manufacturers concerned are also contributing a small share.

The itinerary of the commissioners will take them first to Washington and New York. At New York, the commissioners will receive their cases of samples, and from that port they will sail for Europe. The first South American country visited will be Brazil, which will be reached in October, one of the healthier months of the year. After the commissioners have left Brazil, they will visit Uruguay, Argentina, Chile, Bolivia, Peru, Ecuador, Colombia, Venezuela, Costa Rica, Nicaragua, Honduras, Salvador, and Guatemala.

They will be absent from eight to ten months. Speaking of the matter yesterday, one of them said:

"Our mission, in a broad sense, is to study the markets of South and Central America, or, more specifically, to seek an outlet for the suplus production of Mexico, particularly her cotton goods, in those markets.

One of the essential features to be discussed will be means of communication. We know that, at the same price, some of these cotton goods are equal to any manufactured in England, Germany, United States, or France. Therefore, the question of selling them in the markets of South or Central America, in competition with the goods received from the countries which I have mentioned, resolves itself largely into a problem of carrying facilities. This being so, one of our duties will be not only to investigate the possibility of utilizing existing navigation routes, but to take up with the several Governments the project of establishing new, direct, and mutually subsidized steamship lines between Mexican and other Latin-American ports.

In this connection, of course, it is important to ascertain the prospect for return cargoes, or, in other words, to determine not only what articles Mexico can sell to the other Latin-American countries, but also what articles those countries can sell to Mexico."

NEW FOOD PLANTS IN YUCATAN.

The gardens and fields of Yucatan are filled with succulent vegetables and odorous herbs unknown to the outer world. In the cultivated fields, at the proper seasons, are grown classes of indian corn, beans, squashes, and tubers for which we have no name, for the reason that we have never seen or heard of them.

The forests and jungles contain fruits that, excellent even in their wild state, could be made delicious by scientific care and cultivation. There are half a score of wild fruits that offer more promising results than did the bitter wild almond, the progenitor of the peach.

It is my purpose to bring to notice these promising subjects for cultivation in a series of reports made with the object of attracting the attention of those interested in this line of research and practical work.

The writer holds himself in readiness to supply any person who, or society which, desires the seeds or roots mentioned in these reports for the purpose of study, making only such charges as will cover the actual expense incurred.

The most important of the large cereals is the maize of the Mexicans—the indian corn of the Americans and the ixim of the Mayas of Yucatan. Like several other vegetable products, its origin as a cultivated plant is enveloped in obscurity, the wild plant from which it was evolved not yet having been identified. Many believe that the cultivated plant was born somewhere between Yucatan and the tableland of Mexico. The mother plant was probably a grass, and the new grain spread to all sections, each one giving it certain characteristics, until the varieties grown in the North hardly seem related to those of the southern lands.

Yucatan has six varities of this grain, and the Maya Indian reverently speaks of it as the "grace of God."

The large-stalked, large-grained class known to the natives as xnuc nal (pronounced shnook nál) is the most prominent and has by far the greater acreage devoted to its cultivation on the peninsula (Yucatan). It is planted in May, and when matured is left to harden and season until gathered as needed. This class most nearly resembles our indian corn. It has both the white and yellow grains. Under the haphazard methods of the native Indians, the corn produces in the limestone soil of Yucatan from 20 to 30 bushels to the acre. Under favorable conditions, this yield is often doubled.

The "xmehenal" (shmehenál) is a small, quick-growing variety, about the size of our pop corn. The plants are rarely 4 feet high, and the natives have a saying that the cock can pick the flowers of the true xmehenal without stepping off the ground. One variety matures within sixty days of its planting, and the second needs but fifteen days more.

The xmehenal xtup (shtoop), planted in May, can be gathered in July, and, while the production per acre does not quite reach the figures of the xnuc nal, it has a greater capacity of resisting the extremes of heat and dryness.

The natives of Yucatan prefer the native corn to that imported from the United States, and will cheerfully pay the higher price demanded in times of scarcity. They state that our method of kiln drying injures the grain. They allow the grain to harden and dry slowly in the ear upon the stalk.

The plant, or rather the running vine, known as the macal box (makal bosh), produces a tuberous root of great nutritive value. Entire families have lived upon this root for weeks at a time and were healthy and well nourished. This plant is very productive. About the middle of May the green shoots first appear above the earth. They grow rapidly and in November are ready to be dug.

The tuber is about the size of a large Irish potato and is of a purplish color, like a certain class of sweet potato. It can be cooked in the same way as the sweet potato. The plant is hardy. A long drought may cause the vine to wither, but with the lightest rain it springs up anew. The roots left in the ground as too small for food propagate the plant, and each year the yield increases. It seems to be a kind of native yam; it grows in almost any kind of moderately rich soil, and when cultivated intelligently should be of certain value as a food plant. The xmakin macal (shmakeén makál), like the macal box, appears in May and is gathered in November, but it yields only one or two tubers to the plant. These, however, are of large size, resembling enormous Irish potatoes. I have seen four of these great roots fill a bushel basket. The interior is white and seems to be nearly pure starch. It is planted as we set out potatoes. The plants grow close together, and, while I have no exact figures, the yield per acre should be phenomenal, so far as weight of product is concerned.

Xmehen chi-can (shmehen chi kan) seems to be a kind of artichoke, weighing when mature about a pound. The plants are running vines, rarely more than a yard long. An acre will yield an immense crop under favorable conditions. The plant, sown in August, can be gathered in November.

Xnuc chi-can is a larger root, weighing when mature about 3 pounds. It is a hardy plant and produces well. Both of these roots are eaten roasted or boiled, and many like them raw. Some of the roots sent with this report as specimens* are not of the sizes given, as they have been by force of circumstances taken out of season.

EDWARD H. THOMPSON,
PROGRESO, *August 3, 1902.* *Consul.*

TRADE HINTS FROM GUATEMALA.

The present financial condition of Guatemala, due in part to the awful consequences of the recent earthquakes, and also to the low prices for coffee—the principal export—has caused widespread commercial depression. Coffee planters, as well as those producing other articles for export or home consumption, complain of the scarcity of labor. When the coffee berry ripens, it must be picked and prepared within a certain time. At this critical period, planters go out into the highways and byways in search of labor, but with little success. It is not known whether the amount of wage is the fault or whether the system drives labor from the country; but it is undeniable that mozos, who compose the bulk of the working classes in this Republic, are abandoning their homes and going into the adjoining countries of Mexico and Salvador, where wages are paid in silver.

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*Transmitted to Department of Agriculture with copy of this repo'.

The recent settlement of the English, German, French, and Belgian claims has been a serious drain on the national exchequer, necessitating an extra duty of 30 per cent (payable in gold), which has placed the price of imported articles beyond the reach of the many, and thus caused a general stagnation in business. The importers have lessened their orders and have resolved, for the present at least, to curtail their stocks.

PACKING.

While the subject of packing of United States goods may appear a trifle threadbare, I must say that our disregard of this matter forms the principal barrier to American trade in foreign countries. I was called recently by one of the largest importing houses in Guatemala to witness the unpacking of goods ordered. Out of an order of 50 cases of whisky, 12 cases, or 144 bottles, were broken; how the other 38 cases arrived intact is a mystery. Another shipment was of machine oil. Many of the cans were broken by coming in contact with each other, two cans being packed in one box, too large to keep them secure. The same complaint is heard from drug houses, produce importers, dry-goods dealers, jewelers, etc. They inform me that they desire American goods, but that they run the risk of heavy losses if they order from our country. Merchants have repeatedly informed me that they have instructed the firms from which they buy how to pack. Some resent this as an attempt to interfere in their business, while others give no attention to such advice. Stationers here import English ink because it comes securely packed, each bottle being bound in strong ribbed paper and the box itself being ribbed and of a durable quality. Under the most advantageous port conditions, goods landed from ships necessarily undergo rough usage; but in harbors having the lighterage system, employing men interested in quick dispatch instead of in the security of the goods, these must be packed strongly enough to successfully endure this handling. It frequently happens that a heavy sea causes the goods to be forcibly hurled against the sides of the ship before they reach the launch. This same thing is repeated when the launch arrives at the pier, which is usually half a mile from the ship. All ships at the port of San José de Guatemala anchor at about that distance from the pier. From the moment that goods are put aboard in New York they are handled roughly, and our exporters should put them up accordingly.

CREDITS.

Credits are also a cause of discontent. While I fully appreciate the necessity of close attention in this matter, I believe that where houses are reputable and have a good standing, the credit limit should be increased to a reasonable point. I would, however, discourage the indiscriminate credits advanced by European houses, for even though they have permanent representatives on the ground to guard their accounts, their losses are many. A happy medium would probably prove an advantage to all concerned. The European system of having representatives in the five Republics to guard their accounts and to gain trade, of course, tells in their favor. They keep a line of samples continually on hand, and make occasional trips into the neighboring countries. They usually have storehouses, and can supply demands in a very short time. These are the winning elements of the trade here.

FINISH OF GOODS.

Gloss and varnish attract the attention of the people of these countries more than the grade of goods, particularly when the glossed and varnished article can be bought for a much less price than the superior one. They prefer to have two or three new articles rather than one of much better make. This peculiar disposition of the natives is catered to by the foreign houses, who do not stop to argue, but straightway manufacture the article that will sell. Even among the wealthier class, appearance rather than quality affects the purchase.

JAMES C. MCNALLY,
GUATEMALA CITY, *August 29, 1902.* *Consul-General.*

COLOMBIAN MINING DECREE.

There appears to be considerable interest in mining and mining property in this consular district. It is understood that there is great wealth locked up in these hills and mountains in gold, silver, copper, and coal. Some of these mines have been worked with encouraging results; other companies have purchased property, while still others contemplate making locations. Under the circumstances, I have deemed it proper to make a special report on the recent mining decree that went into effect June 1, 1902, which radically increases the expenses involved.

The essential changes made may be summed up as follows: The cost of denouncing property for mineral purposes was formerly nothing; now it is $10 (about $4 gold). To denounce three pertenencias by the old law cost $5 ($2); at present, it costs $500 ($200) for each pertenencia.* The tax title formerly cost $10 ($4), but by this decree it is made $150 ($60). The annual tax on each pertenencia was $2 (80 cents); now it is $100 ($40), whether it is being worked or not.

For alluvial claims, the annual tax for each square of 5 kilometers was $1 (40 cents); now it is $150 ($60). With these charges, the cost of the smallest claim will amount to $250 ($100) or upwards.

A great deal of dissatisfaction is expressed with the increased charges, and many think that they will retard the development of mines.

At present the outlook for investments in this line is not good, owing to the unsettled condition of the country.

H. A. GUDGER,
Consul-General.

PANAMA, *August 16, 1902.*

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*A pertenencia is a rectangle 600 meters (1,968 feet) long and 240 meters (797 feet) wide.

NOTES.

Hints to Exporters to Siam.—Consul Walter Schumann, of Mainz, August 22, 1902, says:

A German trade journal gives some valuable hints to exporters to Siam, and says, among other things, that illustrated and handsomely gotten-up catalogues and price lists have only an ornamental value for the oriental. The latter wishes to convince himself personally of the quality of the goods he buys, and exporters who take this into consideration can expect to do a large and profitable business with Siam, while those who rely on price lists or traveling salesmen with samples can do business only with great difficulty. As regards the packing of goods, the report says that articles must never be put up in paper. Pharmaceutical and chemical products must be packed in glass or tin and then bedded in sawdust. For other goods, wood shavings are preferable, because sawdust is apt to escape through holes of the inclosing material. Special care must be devoted to the packing of breakable articles. Textile goods should always be baled and covered with water-tight material and the bales bound by iron bands. Articles which rust easily, such as bicycles, should always be packed in wooden cases lined with zinc, well soldered.

Quinine Auction at Batavia.—Consul B. S. Rairden reports from Batavia, August 5, 1902, that at the sixth public auction sale of quinine held in that city on July 30, the following prices were realized:

Editio II, consisting of 3,969 kilograms (8,750 pounds) sulphate of quinine, sold in 350 lots of 11.34 kilograms (25 pounds); 137 lots were sold at 15 florins ($6.03) per kilogram (2.2046 pounds); and 2 lots were sold at 15.05 florins ($6.05) per kilogram.

Editio II and III, consisting of 240 kilograms (529 pounds) sulphate of quinine, weight and packing at purchaser's option, with 5 florins ($2.01) extra per kilogram for Editio III, on the basis of Editio II. Of this lot only 3 were sold on the basis of 15 florins ($6.03) per kilogram.

Owing to the presence of but few purchasers and low bids, very little of the article was disposed of.

The limit of 15 florins at this sale equals the unit price of 0.0525 florins (2.11 cents) for the bark.

The next three sales are advertised for September 3, October 8, and November 12, 1902.

Russian Sugar Surplus.—Consul-General W. R. Holloway sends from St. Petersburg, September 18, 1902, translation of a circular just issued by the Minister of Finance concerning the surplus of sugar, as follows:

> According to the report of the committee of ministers, dated July 3, the quantum of sugar to be placed on the home market for the period 1902–3 is 43,000,000 poods (1,552,816,000 pounds), and the intangible reserve is fixed at 5,000,000 poods (180,560,000 pounds).
>
> On the basis of particulars given by the managers of excise revenues for the term ended August 15, and taking into consideration the area of plantations, the harvest and quality of the sugar-beet roots during the last three periods, and the existing surplus of sugar in different factories, the total output of sugar for this period is estimated at 75,000,000 poods .(2,708,400,000 pounds), out of which 32,000,000 poods (1,155,584,000 pounds) would constitute the surplus.
>
> On the above basis, the minister orders that 54.9 per cent of the output for 1902–3 be passed over to the surplus, out of which 11 per cent must be passed into the intangible reserve and 43.9 per cent to the free surplus of each factory. In those factories where there is already an intangible reserve—which at the end of the accounts must be added to the figure of the total output and redistributed between the free sugar and the surplus in proportion to the new sugar passed to the intangible surplus—an equal quantum of sugar of the preceding reserve is to be passed into the free reserve.

Crops of Russia.—Consul T. E. Heenan writes from Odessa, August 16, 1902:

The year 1902 has been an extremely satisfactory one in Russia, as far as the crops are concerned. With the single exception of flaxseed, which is almost an absolute failure, the crops of the present season are the largest which this country has produced for the past ten years. The yield of barley and rye has been much above the average in quantity, though the quality of the barley is not so good. The wheat harvest is exceptionally large, and, as a rule, the quality is also good. Oats yielded largely in almost all localities, and I am informed that the weight is heavy. Corn is reported to be suffering from some sort of insect, but on the whole the crop in Bessarabia will, I believe, be an average one. Sugar beets are progressing favorably, and have thus far escaped the many enemies which attack this vegetable. As to flaxseed, it is to be feared that Russia will be obliged to import it from Argentina. The above does not apply to nor include Siberia. Reports from that section are very unfavorable.

Strikes of Coal Miners in France.—Consul H. S. Brunot writes from St. Etienne, September 15, 1902:

A congress of the coal miners of all France will be held at Commentry early in October, and it is anticipated that a general strike will immediately follow, as there is no likelihood that the demands for an eight-hour day, increase of wage, etc., can be granted. In the basin of the Loire, which is second in importance of the coal districts of France, a referendum has resulted in a decision to strike immediately, without waiting for the action of the National Federation in October; but the facts that only 3,300 out of over 19,000 miners voted at the referendum and that the majority was less than 1,000, would seem to indicate the existence of a strong sentiment in favor of awaiting the opportunity for united action with the other regions, after the congress of Commentry, instead of entering upon a partial strike in which the segregated local miners would be foredoomed to defeat. There seems to be no diversity of opinion as to a general strike being ordered within the next six weeks.

Mechanical vs. Animal Traction in Paris.—Consul Thornwell Haynes writes from Rouen, August 29, 1902:

According to last year's census, Paris had 96,698 horses which could be utilized in case of war, this having been the average figure for many years; but this year the number has suddenly fallen to 90,796. This considerable diminution is said to be due to mechanical traction. The Paris Omnibus Company had last year 16,579 horses in its service; now it employs nearly 2,000 less. In all the companies which compete with the tramways and the Metropolitan Railway, the diminution of horses has been 2,727. The remaining 3,175 horses which, since last year's census, have passed out of service have, therefore, it is said, been replaced by automobiles.

The Anglo-Belgian Telephone.—Consul G. W. Roosevelt writes from Brussels, September 11, 1902:

The Anglo-Belgian telephone service will be inaugurated in about two months. The submarine cable stations are located at St. Margaret's Bay, near Dover, and at La Panne, a Belgian seaside resort. The work of laying the cable is completed, and the company is now placing the aërial extensions in both England and Belgium. The cable is 90 kilometers (55.422 miles) in length and has two circuits. The total cost when completed will be about 2,000,000 francs ($386,000), to be shared equally by England and Belgium. Belgium will communicate with England from the cities of Brussels and Antwerp only. If communications are numerous and the new line is profitable to the Government, the service will be extended to other cities. The rate of communication has been fixed at 10 francs ($1.93) per three minutes.

Telephones and Telegraphs in Madeira.—Consul T. C. Jones writes from Funchal, August 1, 1902:

The last census gives Funchal a population of 50,000 people. The city is spread over a large area, stretching up and down hill, and yet it has no public telephone. The postal service is not of the best. The common communication is by note and messenger. Several of the leading business houses have private telephones. The different villages of this island have telegraph and postal communications with this city. A wire connects with the light-house at Point St. Lourenzo, 20 miles away, and gives news of approaching steamers from the north about three hours before their arrival. The local telegraph charges are 6 cents for the first word, and 1 cent for each additional word. The postal service is triweekly, and the mails are carried on foot. It seems to me that here is an opening for an enterprising American. An English company got the concession for the electric-light plant, and I understand it pays well.

Genoa-Nice Steamship Line.—Under date of August 28, 1902, Consul Thornwell Haynes, of Rouen, says:

Beginning with the 15th of next December, the Hamburg-American Line will establish a service between Genoa and Nice. The *Colsa*, which at present plies between Hamburg and Heligoland, will leave Genoa triweekly, via San Remo, for Monte Carlo and Nice. Only first-class passage is provided. This, however, is not dear, being 16 francs ($3.09) from Genoa to San Remo, 18 francs ($3.47) to Monte Carlo, and 20 francs ($3.86) to Nice. In commenting upon the fact that Marseilles has permitted a Hamburg company to supplant it on the "Côte d'Azur," French journals speak of the "sad decadence of our merchant marine."

Paris Automobile Exposition.—Under date of August 29, 1902 Consul Thornwell Haynes, of Rouen, sends the following extract from a Paris newspaper:

The circular letter sent by the committee of organization of the Fifth International Automobile Exposition, to be held at the Grand Palais, from December 10 to December 25, 1902, has been so liberally replied to that Mr. Gustave Rives, the commissioner-general, has some doubts about there being room enough for all the applicants for space.

The great success of previous expositions is still fresh in the memory of all persons interested in the trade, and there is promise of a rush to obtain space and be prominently represented at the coming show.

German Tests in Mine-Timber Preserving.—Consul-General O. J. D. Hughes reports from Coburg, August 22, 1902:

A series of experiments were recently carried out at the Altenburg colliery, near Saarbrucken, Germany, with lime, tar, and carbolineum to determine the respective value thereof as preservatives of mine timber against rot. Lime was found to be of the least value, while coal tar, although insuring perfect preservation of the surface of the timber, failed to protect the interior, which in every instance was found to be seriously attacked by rot. Carbolineum, however, gave excellent results, provided the timber coated had been previously barked and well dried.

New Belgian-German Railway.—Under date of September 19, 1902, Consul G. W. Roosevelt, of Brussels, says:

It is intended to establish two new railway branches—one between Lonvain and Neerlinter and the other between Nederheim (near Tongres) and Homburg (near Aubel). The lines now extending from Neerlinter to Nederheim and from Homburg to Aix la Chapelle will be included in the new itinerary and will be improved and developed so as to serve as an important artery of international traffic. This route will shorten the distance and will avoid the inclines at Liege and Ronheide, as well as the numerous curves on the line from Liege to Aix la Chapelle. Express trains between Brussels and Aix la Chapelle will make the run in an hour and a half less time than is now required.

German Finances.—The secretary of embassy at Berlin, Mr. John B. Jackson, under date of August 23, 1902, reports that an official statement for the fiscal year ended March 31, 1902, shows that it closed with a deficit of some 48,400,000 marks ($11,500,000). This amount is made up by an increase of about 21,000,000 marks ($4,998,000) over the estimated expenses of the year, and a decrease of 27,000,000 marks ($6,902,000) in the proportion of the receipts from taxes and other sources, which is not handed over to the separate Federal States, but is retained in the imperial treasury. The army cost about 4,000,000 marks ($952,000) more than was estimated, the navy about 2,000,000 marks ($476,000), and the foreign and home services about 500,000 marks ($119,000) each. The new pension laws increased the expenses ot the Government by nearly 15,000,000 marks ($3,570,000).

Increased Petroleum Prices in Austria.—Consul F. W. Mahin writes from Reichenberg, August 19, 1902:

An important result of the combine of oil producers and refiners, noted in a report from this consulate dated May 10, 1902,* was a recent increase of 3 crowns (60.9 cents) per 100 kilograms (220.46 pounds) in the price of petroleum, and now the refiners announce their intention to add still another crown per 100 kilograms to the price. The retail cost of petroleum is already excessive in this country. As an illuminant, it is far more expensive than gas or electricity. The burden of the higher prices will fall mainly upon the villages, the country districts, and the poorer people—the cities and the well-to-do classes generally using gas or electricity.

Currant Crop of Greece.—Acting Consul L. Nicolaïdes writes from Athens, August 19, 1902, that the Ministerial Council has decided that the proportion of the currant crop of Greece to be retained for the year 1902, according to the law of retention of 1899, is to be 20 per cent of all currants exported to foreign countries from August 18, 1902, to August 17, 1903. It is thought that the currant production of this year will be approximately 330,000,000 pounds. The total quantity exported from August 18, 1901, to July 12, 1902, was 150,000,000 pounds.

At present, adds the writer, the prices of currants are not high, but the growers hope to obtain good prices for the new crops, on account of the percentage of retention having been fixed at 20 per cent instead of 15 per cent, as during the last year.

New Covering for Roads.—Under date of September 15, 1902, Consul Thornwell Haynes writes from Rouen:

French journals speak of a substance which, when placed upon roads, does away with dust and mud. The composition is of interest at present, when so many trials are being made with oil, tar, etc. It consists of the mixture of scoria from a blast furnace and tar. The inventor (an Englishman) claims that the preparation, carefully pressed down with heavy rollers, renders the surface of the road impervious to water and that vehicles can pass at any rate of speed without the least inconvenience from dust or mud.

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*ADVANCE SHEETS NO. 1371; CONSULAR REPORTS NO. 263.

Demand for American Textiles in Amsterdam.—Consul F. D. Hill sends from Amsterdam, August 29, 1902, copy of a letter from Mr. J. H. M. van Ogtrop, a merchant of that city, as follows:

> I should very much like to represent an American textile firm willing to do business in Holland and Belgium. For a long time there has been a good demand for American makes, chiefly in woven fancies, linings, sateens, drills, and prints. Authorities in textiles are of opinion that within a short time America will oust the English market. However, there will never be a chance if America wants to do business on cash terms. As is generally known, the accounts in Holland and Belgium are fairly safe, but the quickest payment that can be desired is on thirty-day terms. In this case, it would be an easy thing for American firms to find a good class of customers. If any of your friends would like to be represented, I beg to offer my services as a well-known and pushing agent.

German Tax on Alcohol.—Consul B. H. Warner writes from Leipzig, September 2, 1902:

On October 1, 1902, the law exempting alcohols for medicinal purposes from taxation, which has long been upon the statute books, will be supplemented by an amendment which requires alcohol for all purposes to pay the same tax. As this law will necessarily tend to make medicines, etc., in the preparation of which a large percentage of alcohol is used, more expensive, and as the different German States have a fixed drug tariff, the German Pharmacist Association is petitioning them to raise the price of all preparations in which alcohol is used, accordingly.

Pressed-Steel Cars in Germany.—Under date of September 1, 1902, Consul B. H. Warner, of Leipzig, says:

The directors of the Prussian State railroads have recommended to the Minister of Public Works that a bill be introduced into the Prussian Parliament, providing for the construction of pressed-steel coal cars of 20 tons carrying capacity. The minister, after giving the matter careful consideration, has suggested that the proposals be somewhat modified, and, as soon as the bill is amended, it is believed that Prussian State railroads will place pressed-steel cars in commission.

German China for Johannesburg.—Consul B. H. Warner reports from Leipzig, September 4, 1902:

Within the past few days, a shipment of china ware has been made from this district to Johannesburg, South Africa, the first since the late disturbances. Attention is called to this fact to show that with the resumption of trade in South Africa, the Germans are making efforts to secure a large portion of the importations. A resident of Leipzig, who is contemplating going to South Africa, says that from advices from the Kimberley district, American and English goods sell much better in that country than German, even though the prices may be 10 or 15 per cent higher. American export houses should busy themselves with South African trade, and bear in mind that now is the time to strike in the struggle for commercial supremacy.

Foreign Commerce of German Southwest Africa.—Under date of August 30, 1902, Consul John F. Winter, of Annaberg, writes:

The foreign commerce of German Southwest Africa made favorable progress in 1901. The exports increased from $214,200 in 1900 to $297,500. This increase consisted chiefly of guano, which is almost exclusively in the hands of a large English establishment in Cape Town. Ostrich feathers are rapidly becoming an article of export. In former years, the natives were in the unrestricted possession of firearms, and it was their chief delight to shoot these profitable birds. To-day, the natives are permitted to have arms only in limited quantities, therefore the ostrich culture is beginning to revive. The imports into German Southwest Africa increased from $1,666,000 in 1900 to $2,380,000. The chief articles imported are railway materials, bridges, cement, lumber, beer, and coal.

Iron and Cotton Interests in French Colonies.—Consul J. C. Covert writes from Lyons, August 28, 1902:

At a recent meeting of the French Statistical Society, the subject of discussion was American competition in steel and iron. It was argued that in order to successfully meet this competition, efforts should be made to utilize the rich mineral deposits in Tunis, near its chief port, Bizerte. The principal speaker said:

> As this colony is exceptionally rich in minerals, it behooves France to display interest in her metallurgical wealth. Bizerte might be made one of the first metallurgical centers of the world. The means of transportation are numerous; the port will be accessible to the largest ships, and there will also be the great Transsaharian Railroad. The immense market of French Africa is also rich in such raw materials as cotton and wool.

France bought in 1899, according to the latest statistics I can obtain, 532,000,000 pounds of wool and 426,000,000 pounds of cotton. The statesmen of France expect, in the course of time, to be able to produce their supply of cotton and wool in their colonies of Tunis, Algeria, and Madagascar.

New Pepper from Africa.—Consul Thornwell Haynes reports from Rouen, September 16, 1902:

There has just been laid before the French Academy of Medicine the result of an analysis made by Dr. Barillé of a new pepper of African origin, recently imported from Kissi, on the Liberian frontier of Guinea. This product, which has already been given the name of Kissine pepper, grows abundantly in this region in a wild state. It is not akin to any known species, and, being very rich in piperine and volatile oil, can be used both as a spice and as a condiment. Its grains, generally very small, are characterized by a pedicule at their base. They give a reddish-brown powder, highly perfumed, and of a peculiar aromatic savor. French journals speak of this article as another interesting and valuable addition to the already long list of French colonial products.

New Railroads in Haiti.—Minister W. F. Powell writes from Port au Prince, September 11, 1902, that an Englishman is negotiating with the Government to build a railroad from Manzanilla (a city in the extreme northwest, near the boundary of the two Republics) and Azua, a city in the southwest. This road will cross the Republic from north to south and will open a vast mineral region, supposed to be very rich in gold, silver, and copper. The syndicate, adds Mr. Powell, also contemplates constructing a railroad from Moeha to La Vega, the object being to connect it with another road running from La Vega to the coast, owned and controlled by an English company. The concession for this last road is held by the Dominican consul at New York, Mr. F. L. Vasques.

Cattle Exports from Honduras.—Consul W. E. Alger reports from Puerto Cortez, August 26, 1902, that there has been a notable decline in the customs receipts at that port during the first six months of 1902, on account of the fact that during 1899 and 1900 Honduras exported to Cuba some 30,000 head of cattle, the value of which, coming into the country, made money plentiful and enabled the people to buy freely. He adds:

Honduras, since 1900, has had no market for her cattle. In the past she depended on Guatemala, but financial conditions in that Republic have closed the market. If an opening for the cattle of Honduras could be secured, her importations would increase at least 50 per cent.

Sewer Contract Tenders for Montevideo.—Consul A. W. Swalm reports from Montevideo, July 26, 1902:

The Department of Fomento has published the official call for tenders for the construction of the new sanitary works for Montevideo, which will comprise a tunnel cut in the rock, 1,278 meters (4,193 feet) long by 3.65 meters (11.9 feet) high and 3 meters (9.9 feet) wide; a principal collector of about 4,000 feet and a second collector of nearly equal size, together with several auxiliaries, as set forth in the plans and specifications, which may be obtained by application to the Minister of Fomento here, or to the Uruguayan legations in London, Paris, and Berlin. Bids will be opened December 15, 1902, at 3 p. m., in Montevideo. The work is estimated to cost something over $3,000,000.

Custom-House in Yucatan.—Consul W. W. Canada reports from Veracruz, September 2, 1902:

The custom-house heretofore located at Puerto Morelos has been removed to "La Bahia de la Ascension," both places on the east coast of Yucatan, where it was opened August 1, 1902. At Cozumel, on the island of Cozumel, a branch of the above-mentioned custom-house was also established on the same date. The jurisdiction of the custom-house at Progreso has been extended to a point situated at 87° 0′ 32″ longitude west of Greenwich, on the north coast of the peninsula of Yucatan. From this point to Cape Kuche, the district is under the jurisdiction of the custom-house at Bahia de la Ascension, and the rest of the east coast is under the jurisdiction of the custom-house of Chetumal.

Dominican Export Regulations.—Minister W. F. Powell writes from Port au Prince, September 11, 1902, that the Dominican Government has enacted a law by which all exports, before leaving the country, must be examined by officers of the Government, and, if found to be damaged, must be confiscated and a fine imposed on the exporters. Goods not properly prepared for shipment will be so marked, and the shipper will be fined. All articles found to be in good condition will be free from export duties for a period of twenty-five years. Bags used for the shipment of coffee, sugar, and cocoa will only pay 50 per cent of the present duty. Sugar has been declared free of export duties for twenty-five years.

Exhibit of Alcohol Appliances at Lima.—Consul C. V. Herdliska,.of Callao, under date of August 22, 1902, says he has been officially advised by the executive committee of the International Exhibition of Industrial Appliances of Alcohol, to be held in Lima, that the Government of Peru has postponed the inauguration of the exhibition, which had been fixed for the 1st of November, 1902, until the 1st of January, 1903. The particulars of this exhibition were reported to the Department by Vice-Consul Joseph C. Cree, under date of April 16, 1902.*

Industrial Company in Honduras.—Consul W. E. Alger writes from Puerto Cortez, September 1, 1902, that United States manufacturers of electric supplies and of material for waterworks may find an opening to sell their goods to the industrial company recently organized at Ceiba. The capital of this company (about $10,000) is entirely paid in, and as much more money as may be necessary will, it is said, be subscribed.

Mining Edict in China.—Under date of August 13, 1902, Minister E. H. Conger sends from Pekin translation of an imperial edict, as follows:

> Mining is at the present time an important factor in our administration. Liu Kun-yi and Chang Chih-tung have recently memorialized the Throne by telegraph, pointing out that we ought to carefully adapt and harmonize our mining regulations with those of other nations. We consider this as eminently proper, and command those viceroys to note carefully how other countries manage such matters, and that they, in consultation with each other, discuss the rules in question, after which they may memorialize the Throne for our sanction by edict. Such rules should have no defects; they should be acceptable everywhere, yet protecting our rights and manifesting our circumspection.

Branch of the Ussuri Railroad.—Commercial Agent R. T. Greener, of Vladivostock, July 26, 1902, says:

An extensive region east of Vladivostock, hitherto inaccessible, is to be placed in communication with the south Ussurian territory by a branch from the Ussuri Railroad. It will be a wide-gauge road, and is estimated to cost about $100,000. It will probably be begun this year. During the winter months timber can be obtained cheaper and work is paid for at lower rates.

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*See ADVANCE SHEETS No. 1346 (May 20, 1902); CONSULAR REPORTS No. 262 (July, 1902).

Transit Dues on Suez Canal Diminished.—Under date of September 4, 1902, the Department is informed by Ambassador Horace Porter, of Paris, that, according to a note received from the president of the Suez Canal Company, on and after January 15, 1903, the rate of transit through the canal will be diminished 50 centimes (9.6 cents) a ton.

Bulawayo-Cape Town Railway Service.—Acting Consul W. C. Magelssen, of Beirut, under date of August 26, 1902, notes as a supplement to Consul Ravndal's report on the Cape to Cairo Railway, of May 10 last,* that, according to telegraphic information, the first train de luxe from Bulawayo arrived at Cape Town August 13, having completed the journey in seventy-four hours. The train will run once each way weekly.

Improvement of the Port of Algiers.—Under date of September 13, 1902, Consul Thornwell Haynes, of Rouen, says:

The French Government publishes this morning a decree authorizing the Algerian Chamber of Commerce to borrow 795,000 francs ($153,435), which will be placed, in virtue of subsidy, at the disposition of the Algerian Government for the execution of works to improve the port of Algiers.

Exposition of Commerce and Hygiene at Athens.—Acting Consul L. Nicolaïdes reports from Athens, September 9, 1902, that the International Exposition of Industry, Commerce, Art, and Hygiene,† which was to have been held in that city in October, 1902, has been postponed to the 7th of April, 1903, so as to enable American products and industries to be represented. Mr. Nicolaïdes is informed that many German, French, and Italian firms have written to the committee of organization that they will take part in the exposition.

Demand for Motors in Corfu.—The following has been received from Consul B. H. Warner, of Leipzig, dated September 1' 1902:

The director of the agricultural experimental station in Corfu, Mr. A. E. Mavrojani, has asked that catalogues and price lists of petroleum and steam engines and gas motors of low horsepower, suitable for running pumps, be sent him.

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*ADVANCE SHEETS No. 1393 (July 16, 1902); CONSULAR REPORTS No. 264 (September, 1902).

†See ADVANCE SHEETS No. 1407 (August 1, 1902); CONSULAR REPORTS No. 264 (September, 1902).

French Demand for Superphosphates.—Consul G. H. Jackson, of La Rochelle, under date of September 2, 1902, reports a demand for American superphosphates (fertilizers). Three thousand tons have recently been sold, and there is an immediate opening for 15,000 tons to one party. Letters should be addressed to the consulate, giving prices f. o. b. Tampa, Fla., and c. i. f. La Rochelle, delivered on cars alongside.

Exhibition of Motor Vessels in Sweden.—Consul R. S. S. Bergh reports from Gothenburg, August 20, 1902:

According to the Göteborgs Aftonblad, there will be an exhibition of motor vessels at Malmö next summer. The place of the exhibition will be the new harbor, which will then be so nearly finished that water can be let in. The motor boats are to have full liberty to make trips with visitors to Helsingborg, Landskrona, Hven, Limhamn, Bjerred, Copenhagen, Skanör, etc.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) have been transmitted since the date of the last report to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
W. R. Holloway, St. Petersburg.	Sept. 20, 1902	Students in Russian technical schools.	Bureau of Education.
H. W. Diederich, Bremen	Sept. 10, 1902	Emigration via Hamburg	Bureau of Immigration.
H. T. Smith, Cairo	Sept. 3, 1902	Cultivation of oranges in Egypt.	Department of Agriculture.
E. Schneegans, Saigon	Aug. 4, 1902	Rice	Do.
M. H. Twitchell, Kingston, Ontario.	Sept. 30, 1902	Crop conditions	Do.

FOREIGN REPORTS AND PUBLICATIONS.

The Agricultural and Economic Future of Ethiopia.—The following extracts are taken from an article in a recent number of the Paris Bulletin de Géographie Commerciale:

Whatever Ethiopia may have been in the past, it is now well known; a journey there is as easy as in Europe; everywhere one can find security, food, and often cheerful hospitality. Agricultural Ethiopia is divided into two parts—north and south—of which the imaginary line will follow about the latitude of Addis-Abeba. North of this line lies old Ethiopia, with small landowners, who cultivate barley, tief, and dagoussa, if they inhabit the table-lands of average altitude, or cotton and coffee, if they are near the deep, warm valleys. The agricultural productions of the Ethiopian table-lands vary with their very different altitudes. The complete deforestation of the north gives a melancholy aspect to the landscape. The natives have cut down, for building or for firewood, all the trees, without ever replanting. In the vicinity of Addis-Abeba, for example, it is impossible to find any shade. The pasture lands stretch out indefinitely, with herds of cattle and horses or flocks of sheep. At long intervals, the round huts of the natives may be seen grouped on the banks of a stream in the bottom of a valley; all around are fields of wheat, barley, tief, lentils, and beans; but live stock is the great resource of the people. In fact, in a country like Ethiopia, completely deprived of natural means of communication and not yet provided with railways, cereals and other products of the soil can be sold only in the region where they grow, while herds of cattle can be taken to the trade centers and even to the ports of the Red Sea without great expense. Thus the country is furrowed with caravans of merchants who come to the small local markets to exchange cotton cloths, silks, weapons, hardware, hats, and military stores for coffee, cattle, sheep, horses, and mules.

The Galla country, or southern Ethiopia, does not present this monotony of vast undulating plains. The mountain groups which compose it are covered to their summits with bushy forests and abound in picturesque sites. The number of the valleys is infinite; every little stream has hollowed out its valley—veritable gardens—where everything seems to grow without cultivation. The marvelous richness of the soil is aided by abundant and regular rains and by an ideal climate. The ground is said to yield, almost without cultivation, two harvests a year. In the lowlands, cotton flourishes; farther up on the slopes are fields of maize, sorghum, barley, wheat, lentils, and beans. In the kitchen gardens, besides the usual vegetables—potatoes, onions, and peas—there will be a square of tobacco, ginger, and cabbages—giant cabbages more than a yard high. Farther to the west, the country is richer, more cultivated, and more populous. For miles in the valleys of the Gabba, Godjibe, and Boro, there are only coffee trees. The undergrowth of the forests is composed entirely of coffee shrubs, and millions of pounds of excellent coffee ripen there every season. The natives gather only a small quantity; the rest falls and decays on the spot.

Northern Ethiopia is already a consumer of manufactured articles. The people have a certain idea of comfort; living in a temperate country with cool nights, they are obliged to dress warmly; they buy woolen stuffs, cotton cloths, silks—even hats and shoes. To profit by the natural wealth of this country, means of communication must be created. What will be the future network of railways in Ethiopia?

It is plain that the Abyssinian plateau may be attacked by railways on three sides. On the northeast, a line could start from the Italian port of Massowah; on the northwest, one should ascend the Blue Nile as far as Khartum; and on the east, a line should run by Djibouti. Which one can most easily become the chief artery of trade? The line of Massowah will serve only the northern provinces; there remain Khartum and Djibouti. By Khartum, England could easily construct a railway the length of the Blue Nile, and then by the valley of the Didessa penetrate to the heart of the table-lands. This line would be well situated, but in order to have the traffic of the Gallas provinces, it would have to be pushed as far as Léka. It would then be more than 1,000 kilometers (621.4 miles) long. But Djibouti is exactly 1,050 kilometers (652.4 miles) distant from Léka, in passing by Addis-Abeba, the capital of the Empire—that is to say, merchandise over the Djibouti line would reach the Red Sea after a passage of 652 miles, while goods which would take the Khartum line would, at the end of the same distance, be 2,441 kilometers (1,516.8 miles) from Alexandria and from the sea; and the freight between Djibouti and Marseilles being one-third less than the price of transportation over the miles of railway, there would seem to be no argument in favor of a line starting from Khartum, except for the Abyssinian products destined to be consumed in Egypt. Djibouti is the natural port of the central table-lands of Ethiopia, and it is destined to be the distributing point for the products of the southern provinces, which have before them a sure future of prosperity.

The Turkish Carpet Industry.—The Nachrichten für Handel und Industrie, Berlin, July 7, 1902, says:

The Turkish carpet industry is most flourishing in the vilayet of Brusa. The chief place of production is Ouchak. Within the last few years, Kutaieh, Kara-Hissar, and Eski-Chehir have come forward as competitors. The production of all these places is classed in trade under the common appellation of Smyrna rugs or carpets. Statistics show that the export of these carpets reaches annually the approximate value of $1,351,000, of which $772,000, more than half, comes from Ouchak. The methods of manufacture in Ouchak are still most primitive. The loom is composed of two vertical and two parallel bars, on which the web is stretched. The width of the looms varies from 1.09 yards to 10.9 yards, according to the size of the rug to be made; from 1 to 15 workwomen are employed on the same loom. The following table shows the number of looms, etc.:

City.	Looms.	Workwomen.
	Number.	*Number.*
Ouchak	1,200	6,000
Kutaieh	100	800
Kara-Hissar	40	300
Eski-Chehir	30	240

The carpets are divided into three catagories, according to their method of production:

1. Tekilmé, web with single thread, therefore finer work and more expensive; price $2.20 to $2.42 per square pik (5.4 square feet).
2. Tschifté ilmé, web with double thread, price $1.63 to $1.98 per square pik. This is the chief quality exported.
3. Barhama, common work; price 88 cents to $1.54 per square pik.

With reference to colors, rugs are divided into two classes: Elvan, with designs using many colors, and Yaprak, using only two colors, generally blue and red. Konia and Angora furnish the wool, the person ordering the designs. The export of Smyrna rugs is distributed as follows: England, 60 per cent; France, 20 per cent; and the United States, 20 per cent. The yearly production of these rugs is estimated at 550,000 to 600,000 square pik, with an approximate value of $1,232,000 to $1,320,000. In the year 1901, rugs to the value of $1,100,000 were sent to Smyrna and Constantinople. The rugs from Kutaieh, Kara-Hissar, and Eski-Chehir are much in demand; the work is more exact and the colors more durable. There are no manufactories; the workwomen weave the rugs at home and earn as much as 8 piasters (35 cents) per day of fourteen hours or more. Orders are placed by agents, who receive 3 per cent commission. The agents have their own dye works, which form an additional source of revenue, as it is customary to dye the wool for the rug at the works of the agent who orders it.

The Cotton Industry of Italy.—The Riforma Sociale, Rome, July 15, 1902, gives the following official statistics regarding the development of the cotton industry in Italy:

The cotton industry ranks second only to that of silk among the textile industries of Italy, not only in the number of workmen employed, but also in the value of the goods produced. Although a comparatively recent industry, it gives employment to 135,000 workmen, of whom nearly 125,000 are engaged in spinning and weaving; the others are distributed in the manufactories of absorbent wadding and cotton, in factories for the working of refuse cotton, of sewing cotton, in dyeing establishments, in bleaching, dressing, and printing spun and woven cottons.

The motive force utilized in factories amounts to about 78,000 horsepower, of which more than 39,000 are represented by steam motors, 34,000 by hydraulic motors, and 4,500 by electrical conductors.

The total number of spindles in use is 2,111,000, of which 1,879,000 are for spinning and 232,000 for twisting thread. The number of looms is figured at 78,000, of which more than 60,000 are mechanical; the remainder—part Jacquard, part simple—are worked by hand in factories. These figures do not include looms worked individually, on their own account, by weavers at home, which represent a very considerable number.

Comparing these figures with similar statistics in 1876, it is seen that the number of workmen has more than doubled, while the motive power has increased more than sixfold. The number of spindles is almost trebled, being twenty-five years ago only 764,000. The same result is shown in the total number of looms, which were then little more than 27,000, with only 14,000 mechanical. These figures show clearly the great progress made in the last quarter of a century in the cotton industry, a progress which will appear the more remarkable when one considers the improvements introduced into spinning machines and mechanical looms, which have contributed to raise the daily output of both. Nor does there appear any reason why the development of this important industry should cease, since in several provinces, especially in Upper Italy, new and important cotton factories are being established, which will contribute in a notable measure to increase the value of the cotton production. This value exceeds to-day, in the opinion of competent persons, who base their judgment upon the figures of Italy's commercial movement, 300,000,000 lire ($57,900,000) annually, while twenty-five years ago it barely reached 51,000,000 lire ($9,843,000).

Fishing and Other Industries of Boulogne.—A recent edition of the Bulletin de Géographie Commerciale, of Paris, says:

Boulogne-sur-mer is by far the most important fishing port of France, and even of the Continent. The growth of this industry is due to the fact that it is in the hands of important houses employing great capital, and also because the most improved machinery is used. Modern steamers are being substituted for the ancient sailing vessels; out of 451 boats, 50 use steam, and among these are 25 with a tonnage of 220 tons and 400 motive horsepower. These vessels are manned by 5,000 sailors. The following table shows the increase of this industry:

Year.	Boats entered and cleared.	Tonnage.	Value of products.
	Number.	*Tons.*	
1893	32,714	975,403	$2,710,067
1898	37,026	1,285,619	2,256,747
1899	39,044	1,336,715	2,432,832
1900	32,584	1,142,013	3,320,100

Numerous accessory industries have developed along with the fishing industry, such as the manufacture of ice, preserved fish, salt fish, maritime construction, etc. The commercial movement of the port has presented the same activity, and importations and exportations have considerably increased, as the following statement shows:

Year.	Imports.	Exports.	Total.
	Tons.	*Tons.*	*Tons.*
1893	251,111	276,794	527,905
1898	306,269	374,700	680,969
1899	346,252	364,636	710,888
1900	518,992	366,660	885,652

Coal, wood, jute, and salt form the bulk of the import trade, besides Norwegian ice and different English goods. The exports comprise chiefly manufactured products, especially food products. Most of the fresh-food products pass through Boulogne, and being of a perishable nature exact very rapid transit—farm products, vegetables, fruits, and also the flowers from the Mediterranean coast. All these articles arrive in prodigious quantities in turn from Algiers, from the south, from the center, and from the north of France, following the season, and are quickly sent to London.

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PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE.*

The publications of the Bureau of Foreign Commerce, Department of State, are:

I.—Commercial Relations, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—Review of World's Commerce, being a summary of the annual reports contained in Commercial Relations.

III.—Consular Reports, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

IV.—Advance Sheets, Consular Reports, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

V.—Exports Declared for the United States, issued quarterly, and containing the declared values of exports from the various consular districts to the United States for the preceding three months. There is also issued an annual edition of Declared Exports, embracing the returns for the fiscal year.

VI.—Special Consular Reports, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued by the Bureau prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880–81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885–86 (a portion of this work was published as Consular Reports No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all these publications except Tariffs in Central America, etc., are exhausted and the Department is, therefore, unable to supply copies.

In 1890, the Department decided to publish reports on special subjects in separate form, to be entitled Special Consular Reports. There are now the following Special Consular Reports:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Files in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Stave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

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* Formerly Bureau of Statistics. Name changed to Bureau of Foreign Commerce by order of the Secretary of State, July 1, 1897.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia, Africa, Australasia, and Polynesia. Supplement (1900). Tariffs of Chile and Nicaragua.

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Vol. 19 (1900).—Paper in Foreign Countries; Uses of Wood Pulp.

Vol. 20 (1900).—Part I. Book Cloth in Foreign Countries, Market for Ready-Made Clothing in Latin America, Foreign Imports of American Tobacco, and Cigar and Cigarette Industry in Latin America. Part II. School Gardens in Europe. Part III. The Stave Trade in Foreign Countries.

Vol. 21 (1900).—Part I. Foreign Markets for American Coal. Part II. Vehicle Industry in Europe. Part III. Trusts and Trade Combinations in Europe.

Vol. 22 (1900 and 1901).—Part I. Acetic Acid in Foreign Countries. Part II. Mineral-Water Industry. Part III. Foreign Trade in Heating and Cooking Stoves.

Vol. 23 (1901).—Part I. Gas and Oil Engines in Foreign Countries. Part II. Silver and Plated Ware in Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Cotton Textiles in Foreign Countries, Files in Spanish America, Fire and Building Regulations, Fruit Culture, Gas in Foreign Countries, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Port Regulations, Refrigerators and Food Preservation; Sericulture, etc.; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

There was also published, in 1899, Proclamations and Decrees during the War with Spain, comprising neutrality circulars issued by foreign countries, proclamations by the President, orders of the War and Navy Departments, and war decrees of Spain.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications of the Bureau available for distribution, copies are mailed to applicants without charge. In view of the scarcity of certain numbers, the Bureau will be grateful for the return of any copies of the monthly or special reports which recipients do not care to retain. Upon notification of willingness to return such copies, the Department will forward franking labels to be used in lieu of postage in the United States, Canada, the Hawaiian Islands, Porto Rico, and Mexico.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address in notifying the Bureau of the fact.

In order to prevent confusion with other Department bureaus, all communications relating to consular reports should be carefully addressed, "Chief, Bureau of Foreign Commerce, Department of State, Washington, U. S. A."

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston made the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to $20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States."

The following statements, running from January 1, 1874, to October 1, 1902, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1898, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1875–1877, 1879–1882, 1884–1887, 1895, and 1897 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic..	Gold and silver..	Peso..................	$0.96,5	Gold—argentine ($4.82,4) and ½ argentine; silver—peso and divisions.
Austria-Hungary*....	Gold	Crown..............	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium..................	Gold and silver..	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	........do	Dollar...............	1.00	
British Honduras......	........do	........do	1.00	
Chile.........................	........do	Peso..................	.36,5	Gold—escudo ($1.25), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Costa Rica.................	........do	Colon................	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centisimos.
Cuba	Gold and silver..	Peso..................	.92,6	Gold—doubloon ($5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown...............	.26,8	Gold—10 and 20 crowns.
Ecuador †	........do	Sucre.................	.48,7	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt.........................	........do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	........do	Mark.................	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver..	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark.................	.23,8	Gold—5, 10, and 20 marks.
Great Britain.............	........do	Pound sterling.	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver..	Drachma...........	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	........do	Gourde..............	.96,5	Silver—gourde.
India ‡......................	Gold	Rupee	.32,4	Gold—sovereign ($4.8665); silver—rupee and divisions.
Italy	Gold and silver..	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan §.....................	Gold	Yen	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	........do	Dollar...............	1.00	
Netherlands..............	Gold and silver..	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar...............	1.01,4	Gold—$2 ($2.02,7).
Peru ‖.......................	........do	Sol	.48,7	Gold—libra ($4.8665); silver—sol and divisions.
Portugal	........do	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia ¶....................	........do	Ruble	.51,5	Gold—imperial ($7.718) and ½ imperial ($3.80); silver—¼, ½, and 1 ruble.
Spain........................	Gold and silver..	Peseta...............	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway.	Gold	Crown...............	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver..	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	........do	Peso..................	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela.................	Gold and silver..	Bolivar..............	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

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* The gold standard went into effect January 1, 1900 (see Commercial Relations, 1899, Vol. II, p. 7). Values are still sometimes expressed in the florin, which is worth 2 crowns.

† Gold standard adopted in November, 1900. (See CONSULAR REPORTS No. 225, June, 1899.)

‡ For an account of the adoption of the gold standard, see CONSULAR REPORTS No. 238, p. 350.

§ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

‖ Gold standard adopted October 13, 1900.

¶ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896–97, p. 254.

B.—*Countries with fluctuating currencies, 1874–1898.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1878.	1883.	1888.	1889.	1890.
Austria-Hungary*	Silver	Florin	$0.47,6	$0.45,3	$0.40,1	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.81,2	.69,9	.68	.85
Central America	do	Peso	.96,5	.91,8	....	.69,9	.68	.85
China	do	Haikwan tael	1.61	....	....	....	....	....
Colombia	do	Peso	.96,5	.96,5	.81,2	.69,9	.68	.85
Ecuador	do	do	.96,5	.91,8	.81,2	.69,9	.68	.85
Egypt †	Gold	Pound (100 piasters).	....	4.97,4	4.90	4.94,3	....	....
India	Silver	Rupee	.45,8	.43,6	.38,6	.32,2	.32,3	.40,4
Japan	Gold	Yen	.99,7	.99,7	....	.99,7	.99,7	.99,7
	Silver		....	....	.87,6	.75,3	.73,4	.91,7
Mexico	do	Dollar	1.04,7½	.99,8	.88,2	.75,9	.73,9	.92,3
Netherlands‡	Gold and Silver.	Florin	.40,5	.38,5	....	....	....	....
Peru	Silver	Sol	.92,5	.91,8	.81,2	.69,9	.68	.85
Russia	do	Ruble	.77,17	.73,4	.65	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.73,3	.63	.61,4	.76,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1891.	1892.	1893.	1894.	1896.	1898.
Austria-Hungary*	Silver	Florin	$0.38,1	$0.34,1	....	....	....	....
Bolivia	do	Boliviano	.77,1	.69,1	$0.61,3	$0.51,6	$0.49,1	$0.42,4
Central America	do	Peso	.77,1	.69,1	.61,3	.51,6	.49,1	.41,4
Colombia	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Ecuador	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
India	do	Rupee	.36,6	.32,8	.29,2	.24,5	.23,3	.20,1
Japan§	do	Yen	.83,1	.74,5	.66,1	.55,6	.52,9	....
Mexico	do	Dollar	.83,7	.75	.66,6	.56	.53,3	.46
Peru	do	Sol	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Russia§	do	Ruble	.61,7	.55,3	.49,1	.41,3	.39,3	....
Tripoli	do	Mahbub of 20 piasters.	.69,5	.62,3	.55,3	.46,5	.44,3	....

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* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (see CONSULAR REPORTS No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

§ See footnote, table of fixed currencies.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1899.				1900.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.43,9	$0.43,4	$0.44,3	$0.43,6	$0.42,7	$0.43,6	$0.43,8	$0.45,1
Central America.	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.45,1
China	Amoy tael	.71	.70,2	.71,6	.70,5	.69,1	.70,5	.70,9	.72,9
	Canton tael	.70,8	.70	.71,4	.70,3	.68,9	.70,3	.70,7	.72,7
	Chefoo tael	.67,9	.67,2	.68,4	.67,4	.66,1	.67,4	.67,8	.69,7
	Chinkiang tael	.69,3	.68,6	.69,9	.68,9	.67,5	.68,8	.69,3	.71,2
	Fuchau tael	.65,6	.65	.66,2	.65,2	.64	.65,2	.65,6	.67,4
	Haikwan tael	.72,2	.71,4	.72,8	.71,8	.70,3	.71,7	.72,1	.74,2
	Hankau tael	.66,4	.65,7	.67	.66	.64,7	.65,9	.66,3	.68,2
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.68,2	.67,5	.68,8	.67,8	.66,5	.67,7	.68,2	.70,1
	Niuchwang tael.	.66,5	.65,9	.67,1	.66,1	.64,8	.66,1	.66,5	.68,4
	Shanghai tael	.64,8	.64,1	.65,4	.64,4	.63,1	.64,4	.64,8	.66,6
	Swatow tael	.65,5	.64,9	.66,1	.65,1	.63,9	.65,1	.65,5	.67,4
	Takao tael	.71,4	.70,7	.72	.71	.69,6	.70,9	.71,4	.73,4
	Tientsin tael	.68,8	.68	.69,4	.68,3	.67	.68,3	.68,7	.70,7
Colombia	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.45,1
Ecuador †	do	.43,9	.43,4	.44,3	.43,6	…………	…………	…………	…………
India	Silver rupee‡	.20,8	.20,6	.21	.20,7	.20,3	.20,7	.20,8	…………
Mexico	Silver dollar	.47,7	.47,2	.48,1	.47,4	.46,4	.47,3	.47,6	.49
Persia	Silver kran	.08,1	.08	.08,2	.08	.07,9	.08	.08,1	.08,3
Peru †	Silver sol	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8	.48,7

Countries.	Monetary unit.	1901.				1902.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.46,8	$0.45,1	$0.43,6	$0.42,8	$0.41,3	$0.40,3	$0.38,2	$0.38,4
Central America.	Silver peso	.46,5	.45,1	.43,6	.42,8	.41,3	.40,3	.38,2	.38,4
China	Amoy tael	.75,7	.72,9	.70,5	.69,1	.66,9	.65,1	.61,8	.62
	Canton tael	.75,5	.72,7	.70,3	.68,9	.66,7	.64,9	.61,7	.61,9
	Chefoo tael	.72,4	.69,7	.67,4	.66,1	.63,9	.62,3	.59,1	.59,3
	Chinkiang tael	.74	.71,2	.68,8	.67,5	.65,3	.63,6	.60,4	.60,6
	Fuchau tael	.70,1	.67,5	.65,2	.64	.61,8	.60,2	.57,2	.57,4
	Haikwan tael	.77,1	.74,2	.71,7	.70,4	.68	.66,3	.62,9	.63,1
	Hankau tael	.70,9	.68,2	.65,9	.64,7	.62,6	.60,9	.57,9	.58
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.72,8	.70,1	.67,8	.66,5	.64,3	.62,6	.59,5	.59,6
	Niuchwang tael.	.71	.68,4	.66,1	.64,8	.62,7	.61,1	.58	.58,2
	Shanghai tael	.69,2	.66,6	.64,4	.63,2	.61,1	.59,5	.56,5	.56,7
	Swatow tael	.70	.67,4	.65,1	.63,9	.61,8	.60,2	.57,1	.57,3
	Takao tael	.76,2	.73,4	.70,9	.69,6	.67,3	.65,5	.62,2	.62,4
	Tientsin tael	.73,4	.70,7	.68,3	.67	.64,8	.63,1	.59,9	.60,1
Colombia	Silver peso	.46,8	.45,1	.43,6	.42,8	.41,3	.40,3	.38,2	.38,4
Mexico	Silver dollar	.50,9	.49	.49	.46,4	.44,9	.43,7	.41,5	.41,7
Persia	Silver kran	.08,6	.08,3	.08,3	.07,9	.07,6	.07,4	.07	.07,1

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* The "British dollar" has the same legal value as the Mexican dollar in Hongkong, the Straits Settlements, and Labuan.

† See footnote, table of fixed currencies.

‡ The sovereign is the standard coin of India, but the rupee is the money of account. See also table of fixed currencies.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Berkovets	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do*	Japan	1.31 pounds.
Do	Java, Siam, and Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chetvert	Russia	5.7748 bushels.
Chih	China	14 inches.

*More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
o	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Funt	Russia	0 9028 pound.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	6 feet.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Koku	Japan	4.9629 bushels.
Korree	Russia	3.5 bushels.
Kwan	Japan	8.28 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11⅜ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Spain	1.0144 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet inch planks, 600 superficial feet.
Manzana	Costa Rica	1½ acres.
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	82 2/7 pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles.
Do	Denmark (geographical)	4.61 miles.
Milla	Nicaragua and Honduras	1.1403 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.82838 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands	137.9 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Spain	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile,* Chile, Mexico, and Peru	101.41 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¾ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acres.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9305 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.

*Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the Peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4.5 bushels.
Tunnland	Sweden	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Spain	0.914117 yard.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.417 gallons.
Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.

Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

Vol. LXX. DECEMBER, 1902. No. 267.

NEW CHINESE TARIFF.

Consul-General John Goodnow sends from Shanghai, September 10, 1902, copy of the new Chinese tariff, which is to take effect October 31, 1902. The agreement between the special commissioners of the United States and of China, a copy of which is also transmitted, reads:

> Whereas, it was provided by the final protocol* signed at Pekin on the 7th of September, 1901 (Article VI), that the existing tariff on goods imported into China should be increased to an effective 5 per cent, and whereas it was further provided that all duties levied on imports ad valorem should be converted, as far as feasible and with the least possible delay, into specific duties, this conversion to be effected in the following manner: The average value of merchandise at the time of landing during the three years 1897, 1898, and 1899—that is to say, the market price less the amount of import duty and incidental expenses—to be taken as the basis for the valuation of such merchandise.
>
> The special commissioners of United States of America (Mr. T. S. Sharretts) and of China (their Excellencies Lu Hai-Huan and Sheng Hsuan-Huai) have agreed and determined, on the basis aforesaid, upon the tariff hereto appended, together with certain rules for the application thereof, and do hereby agree that the said tariff and rules shall be binding on the Governments and subjects of their respective countries.
>
> The tariff and rules aforesaid shall be binding on and after the 31st of October, 1902, the first day of the tenth Chinese moon.
>
> Should it be ascertained hereafter that any articles have been omitted from this tariff which it is found can be conveniently provided for on a specific basis in terms of the final protocol of 1901, it is understood that the necessary additions shall be made at rates to be mutually agreed upon by representatives of the various powers by whom this tariff has been signed.

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*See Advance Sheets No. 1180, Consular Reports No. 256 (January, 1902).

It is understood that, in the event of there being any difference of meaning between the English and Chinese texts of the tariff and rules, the sense, as expressed in the English text, shall be held to be the correct sense.

The present agreement has been drawn up in two identical copies and signed by the special commissioners of the countries aforesaid. One copy shall be given to the special commissioner of the United States of America and one copy shall be given to the special commissioners of China.

The following note from the commissioners of Germany, Great Britain, Japan, and the United States to the commissioners of China is also sent:

We, the special commissioners of Germany, Great Britain, Japan, and the United States of America, in affixing our signatures to the new Chinese specific tariff, wish it to be clearly understood, in view of the fact that the special commissioners of other countries are only empowered to sign the tariff subject to reference to their respective Governments and that other powers have not appointed representatives to sign it, that no alterations can hereafter be made in the said tariff or rules appended thereto by agreement between China and any other power, unless the consent of our Governments to such alterations shall first have been obtained.

The text of the tariff follows:

IMPORT DUTY.

		Hk. taels.[*]
Agar-agar	per picul[†]	0.300
Agaric. *See* Fungus.		
Amber	per catty[‡]	.325
Aniseed (star):		
First quality (value 15 taels and over per picul)	per picul	1.000
Second quality (value under 15 taels per picul)	do	.440
Apricot seed	do	.900
Arrowroot and arrowroot flour		5 per ct.
Asafetida	per picul	1.000
Asbestus boiler composition	do	.200
Asbestus fiber	do	5.000
Asbestus millboard	do	.500
Asbestus packing, including sheets and blocks	do	3.500
Asbestus packing, metallic	do	5.000
Asbestus yarn	do	2.250
Awabi	do	1.500
Bacon and ham		5 per ct.
Bags:		
Grass	per thousand	1.250
Gunny	do	4.250
Gunny (old)		5 per ct.
Hemp	per thousand	4.250
Hemp (old)		5 per ct.
Straw	per thousand	1.250

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[*] On account of the fluctuation in value of the haikwan tael, the equivalents in United States currency are not given. The value on October 1, 1902, was estimated by the United States Mint at 63.1 cents.

[†] 1 picul=133⅓ pounds.

[‡] 1 catty=1⅓ pounds.

		Hk. taels.*
Baking powder in bottles or tins:		
4-ounce	per dozen	0.083
6-ounce	do	.110
8-ounce	do	.145
12-ounce	do	.226
1-pound	do	.303
3-pound	do	.810
5-pound	do	1.350
Bark:		
Mangrove	per picul†	.073
Plum tree	do	.120
Yellow (for dyeing)		5 per ct.
Yellow (medicinal)	per picul	.800
Barley, pearl	do	.300
Basins, iron (enameled):		
Up to 9 inches in diameter, decorated or not decorated	per dozen	.050
Over 9 inches in diameter, agate, blue and white, gray or mottled, not decorated	per dozen	.090
Over 9 inches in diameter, decorated (with gold)	do	.175
Over 9 inches in diameter, decorated (without gold)	do	.125
Basins, tin (common)	per gross	.250
Beads:		
Coral	per catty‡	.750
Cornelian	per picul	7.000
Glass of all kinds		5 per ct.
Beer. *See* Wines, etc.		
Beeswax, yellow	per picul	1.600
Belting		5 per ct.
Betel-nut husk:		
Dried	per picul	.077
Fresh	do	.018
Betel-nut leaves, dried	do	.045
Betel nuts:		
Dried	do	.225
Fresh	do	.018
Bezoar cow, Indian		5 per ct.
Bicho de Mar:		
Black	per picul	1.600
White	do	.700
Bicycle materials		5 per ct.
Bicycles	each	3.000
Birds' nests:		
First quality	per catty	1.400
Second quality	do	.450
Third quality	do	.150
Blue:		
Paris	per picul	1.500
Prussian	do	1.500
Bones, tiger	do	2.500
Books:		
Chinese		Free.
Printed, and charts, maps, newspapers, and periodicals		Free.

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*On October 1, 1902, the haikwan tael was estimated by the United States Mint at 63.1 cents.

† 1 picul = 133⅓ pounds.

‡ 1 catty = 1⅓ pounds.

Article	Unit	Hk. taels.*
Borax:		
Crude	per picul†	0. 610
Refined	do	1. 460
Braid, llama	do	5. 000
Bricks, fire		5 per ct.
Bronze powder	per picul	2. 200
Butter in tins, jars, and other packages	do	2. 000
Buttons:		
Agate and porcelain	per 12 gross	. 010
Brass and other kinds (not jewelry)	per gross	. 020
Byrrh. (*See* Wines, etc.)		
Camphor	per picul	1. 650
Camphor baroos:		
Clean	per catty‡	2. 450
Refuse		5 per ct.
Candles:		
9-ounce	per case of 25 packages of 6 candles	. 075
12-ounce	do	. 100
16-ounce	do	. 133
All kinds, differently packed	per picul	. 750
Other weights, duty in proportion.		
Canes:		
Bamboo	per thousand	. 400
Coir—		
1 foot long	per picul	. 200
5 feet long	per thousand	. 300
Canned fruits, vegetables, etc. (all weights and measures approximate):		
Table fruits (apples, apricots, grapes, peaches, pears, and plums), per dozen 2½-pound cans		. 065
Pie fruits (apples, apricots, grapes, peaches, pears, and plums), per dozen 2½-pound cans		. 057
Preserved vegetables in glass bottles, jars, cardboard, or wooden boxes, including weight of immediate package—		
Asparagus	per dozen 2½-pound tins	. 118
Corn	per dozen 2-pound tins	. 054
Pease	do	. 060
String beans	do	. 054
Tomatoes	per dozen 2½-pound tins	. 054
All other vegetables preserved in tins, bottles, or jars, including weight of immediate package	per picul	. 525
Tomato sauce and catsup—		
½-pint bottles	per dozen	. 054
1-pint bottles	do	. 087
Jams and jellies—		
1-pound tins, bottles, or jars	per dozen	. 060
2-pound tins, bottles, or jars	do	. 118
Milk (including condensed):	per case of 4 dozen 1-pound tins	. 250
Cream, evaporated—		
4 dozen pints (family size)	per case	. 230
2 dozen quarts (hotel size)	do	. 260

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‡ 1 catty=1⅓ pounds.

Canned fruits, etc.—Continued.

		Hk. taels.*
Canned meats—		
Bacon or ham, sliced—		
Half-pound tins	per dozen	0.077
1-pound tins	do	.144
Dried beef, sliced	per dozen 1-pound jars	.144
Mince-meat—		
1½-pound pails	per dozen	.100
3-pound pails	do	.181
Kits (half barrels and barrels)	per picul†	.729
Pork and beans, plain or with tomato sauce—		
1-pound tins	per dozen	.040
2-pound tins	do	.075
3-pound tins	do	.085
Potted and deviled meat—		
Quarter-pound tins	do	.022
Half-pound tins	do	.042
Potted and deviled poultry and poultry and meat combined—		
Quarter-pound tins	per dozen	.042
Half-pound tins	do	.072
Soup and bouilli—		
2-pound tins	do	.101
6-pound tins	do	.244
Tamales, chicken—		
Half-pound tins	do	.051
1-pound tins	do	.080
Tongues of every description—		
Half-pound tins	do	.098
1-pound tins	do	.204
1½-pound tins	do	.287
2-pound tins	do	.333
2½-pound tins	do	.445
3-pound tins	do	.515
3¼-pound tins	do	.545
All other canned meats, including game, of every description, with or without vegetables—		
Half-pound tins	do	.052
1-pound tins	do	.063
2-pound tins	do	.120
4-pound tins	do	.210
6-pound tins	do	.370
14-pound tins	do	.810
Canvas and cotton duck, not exceeding 36 inches wide	per yard	.010
Capoor cutchery		5 per ct.
Cardamoms:		
Superior, and amomums	per picul	10.000
Inferior, or grains of paradise	do	1.000
Husk	do	.250
Cards, playing		5 per ct.

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		Hk. taels.*
Cassia.		
Buds	per picul†	0.750
Lignea	do	.920
Twigs	do	.170
Cement	per cask of 3 piculs	.150
Cereals and flour (including barley, maize, millet, oats, paddy, rice, wheat, and flour made therefrom; also buckwheat and buckwheat flour, corn flour, and yellow corn meal, rye flour, and hovis flour, but not including arrowroot and arrowroot flour, cracked wheat, germea, hominy, pearl barley, potato flour, quaker oats, rolled oats, sago and sago flour, shredded wheat, tapioca and tapioca flour, and yam flour)		Free.
Chairs, Vienna bent-wood	per dozen	.800
Charcoal	per picul	.030
Cheese		5 per ct.
Chestnuts	per picul	.180
China root, whole, sliced, or in cubes	do	.650
China ware, coarse and fine		5 per ct.
Chloride of lime	per picul	.300
Chocolate, sweetened	per pound	.012
Cigarettes:		
First quality (value exceeding 4.50 taels per thousand)	per thousand	.500
Second quality (value not exceeding 4.50 taels per thousand)	do	.090
Cigars	do	.500
Cinnabar	per picul	3.750
Cinnamon	do	4.000
Clams, dried	do	.550
Clocks of all kinds		5 per ct.
Cloves	per picul	.630
Cloves, mother	do	.360
Coal:		
Asiatic	per ton	.250
Other kinds	do	.600
Asiatic, briquettes	do	.500
Cochineal		5 per ct.
Cockles:		
Dried	per picul	.500
Fresh	do	.050
Cocoa	do	3.600
Coffee	do	1.000
Coir canes:		
1 foot long	per picul	.200
5 feet long	per thousand	.300
Coke:		
Asiatic	per ton	.500
Other kinds	do	.900
Compoy	per picul	2.000
Coral	per catty‡	1.110
Coral beads	do	.750
Coral, broken and refuse	per catty	.550
Cordage of all kinds		5 per ct.
Cornelian beads	per picul	7.000

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		Hk. taels.*
Cornelian stones, rough	per hundred	0. 300
Corundum sand	per picul†	. 195
Cotton piece goods:		
Gray shirtings or sheetings, not exceeding 40 inches wide and not exceeding 40 yards long—		
(*a*) Weight 7 pounds and under	per piece	. 050
(*b*) Weight over 7 pounds and not over 9 pounds	do	. 080
(*c*) Weight over 9 pounds and not over 11 pounds	do	. 110
(*d*) Weight over 11 pounds	do	. 120
Imitation native cotton cloth (hand-made), gray or bleached—		
(*a*) Not exceeding 20 inches wide and not exceeding 20 yards long; weight 3 pounds and under	per piece	. 027
(*b*) Exceeding 20 inches wide		5 per ct.
White shirtings, white Irishes, white sheetings, white brocades, and white striped or spotted shirtings, not exceeding 37 inches wide and not exceeding 42 yards long	per piece	. 135
Drills, gray or white, not exceeding 31 inches wide and not exceeding 40 yards long—		
(*a*) Weight 12¾ pounds and under	per piece	. 100
(*b*) Weight over 12¾ pounds	do	. 125
Jeans, gray or white—		
(*a*) Not exceeding 31 inches wide and not exceeding 30 yards long	per piece	. 090
(*b*) Not exceeding 31 inches wide and not exceeding 40 yards long	per piece	. 120
T cloths, gray or white—		
(*a*) Not exceeding 34 inches wide and not exceeding 24 yards long	per piece	. 070
(*b*) Not exceeding 34 inches wide and exceeding 24 yards, but not exceeding 40 yards long	per piece	. 135
(*c*) Exceeding 34 inches but not exceeding 37 inches wide and not exceeding 24 yards long	per piece	. 080
Crimp cloth and crape, plain—		
(*a*) Not exceeding 30 inches wide and not exceeding 6 yards long	per piece	. 027
(*b*) Not exceeding 30 inches wide, exceeding 6 yards, but not exceeding 10 yards long	per piece	. 035
(*c*) Not exceeding 30 inches wide but exceeding 10 yards long	per yard	. 003½
White muslins, white lawns, and white cambrics, not exceeding 46 inches wide and not exceeding 12 yards long	per piece	. 032
Mosquito netting, white or colored, and exceeding 90 inches wide	per yard	. 010
Lenos and balzarines, white, dyed, or printed, not exceeding 31 inches wide and not exceeding 30 yards long	per piece	. 090
Leno brocades and balzarine brocades, dyed		5 per ct.
Prints—		
(*a*) Printed cambrics, lawns, or muslins, not exceeding 46 inches wide and not exceeding 12 yards long	per piece	. 037

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Cotton piece goods—Continued.

Prints—Continued. Hk. taels.*

(*b*) Printed chintzes, printed crapes, printed drills, printed furnitures, printed shirtings, printed T cloths (including those goods known as blue and white printed T cloths), printed twills, but not including goods mentioned in (*e*) and (*h*)—

1. Not exceeding 20 inches wide.................................. 5 per ct.
2. Exceeding 20 inches but not exceeding 31 inches wide and not exceeding 30 yards long..............per piece... 0. 080

(*c*) Printed crimp cloths—

1. Not exceeding 30 inches wide and not exceeding 6 yards long...per piece... .027
2. Not exceeding 30 inches wide, exceeding 6 yards but not exceeding 10 yards long..................per piece... .035
3. Not exceeding 30 inches wide but exceeding 10 yards long...per yard... .035

(*d*) Printed lenos and balzarines not exceeding 31 inches wide and not exceeding 30 yards long......................per piece... .090

(*e*) Printed sheetings not exceeding 36 inches wide and not exceeding 43 yards long................................... per piece... .185

(*f*) Printed Turkey reds of all kinds not exceeding 31 inches wide and not exceeding 25 yards long......................per piece... .190

(*g*) Printed sateens, printed satinets, printed reps, printed cotton lastings, including all cotton piece goods which are both dyed and printed, except those specified in (*f*) and (*h*), and including any special finish, such as mercerized finish, schreiner finish, gassed finish, silk finish, or electric finish, not exceeding 32 inches wide and not exceeding 32 yards long...per piece... .250

(*h*) Duplex prints or reversible cretonnes (not including those goods known as blue and white printed T cloths).............. 5 per ct.

Dyed cottons—

(*a*) Dyed plain cottons, *i. e.*, without woven or embossed figures (including plain Italians, lastings, reps, and ribs, and all other dyed plain cottons not otherwise enumerated, and including any special finish, such as mercerized finish, schreiner finish, gassed finish, silk finish, or electric finish), not exceeding 36 inches wide and not exceeding 33 yards long..per piece... .240

(*b*) Dyed figured cottons, *i. e.*, with woven or embossed figures (including figured Italians and lastings, figured reps and figured ribs, and all other dyed figured cottons not otherwise enumerated, and including any special finish, such as mercerized finish, schreiner finish, gassed finish, silk finish, or electric finish), not exceeding 36 inches wide and not exceeding 33 yards long..per piece... .150

(*c*) Dyed crimp cloth—

1. Not exceeding 30 inches wide and not exceeding 6 yards long..per piece... .027
2. Not exceeding 30 inches wide, exceeding 6 yards but not exceeding 10 yards long..................per piece... .035
3. Not exceeding 30 inches wide but exceeding 10 yards long...per yard... .003½

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*On October 1, 1902, the haikwan tael was estimated by the United States Mint at 63.1 cents.

Cotton piece goods—Continued.	
Dyed cottons—Continued.	Hk. taels.*
(*d*) Dyed drills, not exceeding 31 inches wide and not exceeding 43 yards long per piece...	0.170
(*e*) Dyed lenos and balzarines not exceeding 31 inches wide and not exceeding 30 yards long per piece...	.090
(*f*) Dyed leno brocades	5 per ct.
(*g*) Dyed muslins, lawns, and cambrics, not exceeding 46 inches wide and not exceeding 12 yards long per piece...	.037
(*h*) Dyed shirtings and sheetings not exceeding 36 inches wide and not exceeding 43 yards long per piece...	.150
(*i*) Hongkong-dyed shirtings not exceeding 36 inches wide and not exceeding 20 yards long per piece...	.100
(*j*) Dyed cotton cuts not exceeding 36 inches wide and not exceeding 5¼ yards long per piece...	.022½
(N. B.—The pro rata rule does not apply.)	
(*k*) Dyed T cloths (including dyed alpacianos), dyed real and imitation Turkey reds of all kinds, not exceeding 32 inches wide and not exceeding 25 yards long—	
1. Weight, 3¼ pounds and under per piece...	.060
2. Weight, over 3¼ pounds do......	.100
Flannelettes and cotton Spanish stripes—	
(*a*) Cotton flannel, Canton flannel, swan's-down, flannelettes, and raised cotton cloths of all kinds, plain, dyed, and printed—	
1. Not exceeding 36 inches wide and not exceeding 15 yards long per piece...	.065
2. Not exceeding 36 inches wide, exceeding 15 yards but not exceeding 30 yards long per piece...	.130
(*b*) Dyed cotton Spanish stripes—	
1. Not exceeding 32 inches wide and not exceeding 20 yards long per piece...	.085
2. Exceeding 32 inches but not exceeding 64 inches wide and not exceeding 20 yards long per piece...	.170
Colored woven cottons, *i. e.*, dyed in the yarn, except crimp cloth.....	5 per ct.
Crimp cloth—	
(*a*) Not exceeding 30 inches wide and not exceeding 6 yards long, per piece....	.027
(*b*) Not exceeding 30 inches wide and exceeding 6 yards but not exceeding 10 yards long per piece...	.035
(*c*) Not exceeding 30 inches wide but exceeding 10 yards long, per yard	.003½
Velvets and velveteens, velvet cords, and fustians—	
(*a*) Velvets and velveteens, plain—	
1. Not exceeding 18 inches wide per yard...	.006
2. Exceeding 18 inches but not exceeding 22 inches wide, per yard	.007
3. Exceeding 22 inches but not exceeding 26 inches wide, per yard	.008
(*b*) Velvets and velveteens, printed or embossed, not exceeding 30 inches wide per yard...	.015

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		Hk. taels.*
Cotton piece goods—Continued.		
Velvets and velveteens, etc.—Continued.		
(*c*) Dyed velvet cords, dyed velveteen cords, dyed corduroys, dyed fustians of any description, not exceeding 30 inches wide	per yard	0.015
Blankets, cotton, plain, printed, or jacquard	per piece	.030
Handkerchiefs, cotton—		
(*a*) Plain, dyed, or printed, not embroidered, hemstitched or initialed, not exceeding 1 yard square	per dozen	.020
(*b*) All other handkerchiefs		5 per ct.
Singlets or drawers, cotton	per dozen	.125
Socks, cotton (including lisle thread)—		
First quality (*i. e.*, valued at 1 tael or over per dozen pairs), per dozen pairs		.075
Second quality (*i. e.*, valued at less than 1 tael per dozen pairs), per dozen pairs		.032
Towels, cotton—		
(*a*) Honeycomb or huckaback, plain or printed (dimensions exclusive of fringe)—		
1. Not exceeding 18 inches wide and not exceeding 40 inches long	per dozen	.020
2. Exceeding 18 inches wide and not exceeding 50 inches long	per dozen	.030
(*b*) All other towels		5 per ct.
Cottons, unclassed		5 per ct.
Cotton, raw	per picul†	.600
Cotton thread:		
Ball thread, dyed or undyed	do	3.000
On spools—		
50 yards	per gross	.040
100 yards	do	.080
200 yards	do	.160
Cotton yarn:		
Gray or bleached	per picul	.950
Dyed		5 per ct.
Gassed		5 per ct.
Mercerized		5 per ct.
Wooloa or berlinette	per picul	3.500
Cow bezoar, Indian		5 per ct.
Crabs' flesh	per picul	.600
Crocodile (including armadillo) scales	do	2.725
Currants	do	.500
Cutch	do	.300
Cuttlefish	do	.667
Dyes, colors, and paints:		
Aniline		5 per ct.
Blue—		
Paris	per picul	1.500
Prussian	do	1.500

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Dyes, colors, and paints—Continued.		Hk. taels.[*]
Bronze powder	per picul[†]	2.200
Carthamin		5 per ct.
Chrome yellow		5 per ct.
Cinnabar	per picul	3.750
Gamboge	do.	2.700
Green—		
Emerald	do.	1.000
Schweinfurt or imitation	do.	1.000
Indigo—		
Dried, artificial, or natural		5 per ct.
Liquid—		
Artificial	per picul	2.025
Natural	do.	.215
Paste, artificial	do.	2.025
Lead—		
Red, dry or mixed with oil	do.	.450
White, dry or mixed with oil	do.	.450
Yellow, dry or mixed with oil	do.	.450
Logwood extract	do.	.600
Ocher	do.	.600
Smalt	do.	1.600
Ultramarine	do.	.500
Vermilion	do.	4.000
Imitation		5 per ct.
White zinc		5 per ct.
Paints, unclassed		5 per ct.
Elephants' teeth (other than tusks) and jaws, whole or part	per picul	3.000
Elephants' tusks, whole or parts	per catty[‡]	.170
Emery cloth and sandpaper (sheets not exceeding 144 square inches), per ream		.250
Emery powder		5 per ct.
Enameled ironware:		
Mugs, cups, basins, and bowls, 9 inches or under in diameter, decorated or not decorated	per dozen	.050
Basins and bowls over 9 inches in diameter (agate, blue, and white, gray, mottled), not decorated	per dozen	.090
Basins and bowls over 9 inches in diameter decorated with gold, per dozen		.175
Basins and bowls over 9 inches in diameter decorated without gold, per dozen		.125
Enamel ware, unclassed		5 per ct.
Fans:		
Palm-leaf—		
Coarse	per thousand	.280
Fine	do.	.450
Fancy	do.	1.000
Paper or cotton, of all kinds	do.	1.400
Silk		5 per ct.

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		Hk. taels.*
Feathers.		
Kingfisher—		
Part skins (*i. e.*, wings, tails, or backs)	per hundred	0. 250
Whole skins	do.	. 600
Peacock		5 per ct.
Files. *See* Tools.		
Fire clay	per picul †	. 050
Firewood	do.	. 010
Fish:		
Cuttle	do.	. 667
Dried or smoked, in bulk (including stockfish but not including cuttlefish)	per picul	. 315
Fresh	do.	. 137
Maws	do.	4. 250
Salt	do.	. 160
Stock	do.	. 315
Fishskins	do.	. 600
Flints	do.	. 040
Flour. *See* Cereals.		
Flour, arrowroot, potato, sago, tapioca, and yam		5 per ct.
Fungus, or agaric	per picul	1. 750
Fungus, white	per catty ‡	. 250
Galangal	per picul	. 170
Gambier	do.	. 300
Gambier, false or cunao (yam-root dyestuff)	do.	. 150
Gamboge	do.	2. 700
Gasoline or stove naphtha	per 10 gallon drum	. 150
Ginseng:		
Crude—		
First quality (value exceeding 2 taels per catty)	per catty	. 220
Second quality (value not exceeding 2 taels per catty)	do.	. 072
Clarified or cleaned—		
First quality (value exceeding 11 taels per catty)	do.	1. 100
Second quality (value exceeding 6 taels, but not exceeding 11 taels, per catty)	per catty	. 375
Third quality (value exceeding 2 taels, but not exceeding 6 taels, per catty)	per catty	. 220
Fourth quality (value not exceeding 2 taels per catty)	do.	. 080
Glass:		
Plate—		
Silvered	per square foot	. 025
Unsilvered		5 per ct.
Window—		
Colored, stained, ground, or obscured	per box of 100 square feet	. 350
Common, not stained, colored, or otherwise obscured	do.	. 170
Glass powder (*see* match-making materials)	per picul	. 110
Glue	do.	. 830
Gold thread, imitation. *See* Thread.		
Groundnuts	per picul	. 150
Gum arabic	do.	1. 000

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		Hk. taels.*
Gum benjamin	per picul†	0.600
Gum benjamin, oil of		5 per ct.
Gum dragon's blood	per picul	4.000
Gum myrrh	do.	.465
Gum olibanum	do.	.450
Gum resin	do.	.187
Gutta-percha. *See* India rubber.		
Hair, horse	do.	1.400
Hair (horsetails)	do.	2.500
Hams		5 per ct.
Handkerchiefs. *See* Cotton piece goods.		
Hartall or orpiment	per picul	.450
Hemp		5 per ct.
Hessians or burlaps, all weights	per 1,000 yards	2.850
Hide poison or specific		5 per ct.
Hides, buffalo and cow	per picul	.800
Hollow ware, cast (coated or tinned)	do.	.500
Hoofs, animal	do.	.125
Hops		5 per ct.
Horns:		
Buffalo and cow	per picul	.350
Deer		5 per ct.
Rhinoceros	per catty‡	2.400
Hosiery. *See* Cotton piece goods (socks).		
India rubber and gutta-percha articles (other than boots and shoes)		5 per ct.
India rubber and gutta percha, crude	per picul	3.140
India-rubber boots	per pair	.080
India-rubber shoes	do.	.020
India rubber, old (fit only for remanufacture)	per picul	.250
Indigo:		
Dried, artificial, or natural		5 per ct.
Liquid—		
Artificial	per picul	2.025
Natural	do.	.215
Paste, artificial	do.	2.025
Ink, printing		5 per ct.
Isinglass (fish glue)	per picul	4.000
Isinglass, vegetable	do.	1.750
Jams and jellies in tins, bottles, or jars:		
1-pound	per dozen	.060
2-pound	do.	.118
Joss sticks	per picul	.640
Kerosene oil cans and cases, empty	per 2 cans in 1 case	.005
Lace open work or insertion work of cotton, machine made:		
(*a*) Not exceeding 1 inch wide, outside measurement, per 12 dozen yards		.050
(*b*) Exceeding 1 inch, but not exceeding 2 inches wide, outside measurement	per 12 dozen yards	.100
(*c*) Exceeding 2 inches, but not exceeding 3 inches wide, outside measurement	per 12 dozen yards	.166

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		Hk. taels.[*]
Lace open work or insertion work of cotton, etc.—Continued.		
(*d*) Exceeding 3 inches wide, outside measurement, per 12 dozen yards		0.216
Lace open work or insertion work of any fibrous material except silk or cotton, or imitation gold or silver thread:		
(*a*) Machine made	per catty[†]	.500
(*b*) Handmade (including cotton)	do.	2.400
Lacquer ware		5 per ct.
Lamps and their accessories		5 per ct.
Lamp wick	per picul[‡]	2.000
Lard, pure or compound	do.	.600
Lead (red, white, yellow, dry, or mixed with oil)	do.	.450
Leather:		
Belting		5 per ct.
Calf	per picul	7.000
Colored	do.	7.000
Cow	do.	2.500
Harness (not including enameled or pigskin)	do.	3.000
Kid	do.	7.000
Sole	do.	2.500
Patent	do.	7.000
All other kinds		5 per ct.
Lichees, dried	per picul	.450
Lily flowers, dried	do.	.325
Lily seed (*i. e.*, lotus nuts without husks)	do.	1.000
Lime, chloride of	do.	.300
Linen		5 per ct.
Liqueurs. *See* Wines, etc.		
Licorice	per picul	.500
Logwood extract	do.	.600
Lotus nuts (*i. e.*, lily seeds with husks)	do.	.400
Lucraban seed	do.	.350
Lung-ngan pulp	do.	.550
Lung-ngans, dried	do.	.450
Macaroni and vermicelli, and similar pastes	do.	.325
Mace		5 per ct.
Machines, sewing (hand or foot)		5 per ct.
Madeira. *See* Wines, etc. (vins de liqueur).		
Malaga. *See* Wines, etc. (vins de liqueur).		
Malt	per picul	.370
Mangrove bark	do.	.073
Manure, chemical		5 per ct.
Margarin, in tins, jars, and kegs	per picul	1.400
Marsala. *See* Wines, etc. (vins de liqueur).		
Matches:		
Rainbow or brilliant	per 50 gross boxes	1.500
Wax vestas, not exceeding 100 in a box	per 10 gross boxes	1.600
Wood, safety or other—		
Large, boxes not exceeding 2½ by 1½ by ¾ inches, per 50 gross boxes		.630

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[†] 1 catty=1⅓ pounds.

[‡] 1 picul=133⅓ pounds.

		Hk. taels.*
Matches—Continued.		
Wood, safety or other—Continued.		
Small, boxes not exceeding 2 by 1⅜ by ⅝ inches, per 100 gross boxes		0.920
Boxes exceeding above sizes		5 per ct.
Match-making materials:		
Glass powder	per picul†	.110
Phosphorus	do	4.125
Splints	do	.088
Wax, paraffin	do	.500
Wood shavings	do	.113
Mats:		
Coir (door)	per dozen	1.000
Formosa grass (bed)	each	.050
Rush	per hundred	.500
Straw	do	.225
Tatami	each	.045
Matting:		
Coir, not exceeding 36 inches wide	per roll of 100 yards	2.750
Straw, not exceeding 36 inches wide	per roll of 40 yards	.250
Meats, in bulk:		
Beef, corned or pickled (in barrels)	per picul	.375
Dry-salted meat, in boxes and barrels	do	.475
Dry sausages	do	.808
Ham and breakfast bacon, in boxes or barrels		5 per ct.
Lard, pure or compound	per picul	.600
Melon seeds	do	.250
Metals:		
Antifriction		5 per ct.
Antimony	per picul	.700
Brass and yellow metal—		
Bars and rods	do	1.150
Bolts and nuts and accessories	do	1.150
Foil	do	1.675
Nails	do	1.150
Screws		5 per ct.
Sheets, plates, and ingots	per picul	1.150
Tubes	do	1.150
Wire	do	1.150
Copper—		
Bars and rods	do	1.300
Bolts, nuts, rivets, and washers		5 per ct.
Ingots	per picul	1.175
Nails	do	1.300
Sheets and plates	do	1.300
Slabs	do	1.175
Tacks		5 per ct.
Tubes		5 per ct.
Wire	per picul	1.300

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† 1 picul=133⅓ pounds.

Metals—Continued.

		Hk. taels.*
Dross—		
Iron	per picul†	0.160
Iron and tin	do	.300
Tin	do	.500
German silver—		
Sheets	do	2.200
Wire	do	1.500
Iron and mild steel, new—		
Anchors, and parts thereof; mill iron; mill and ships' cranks and forgings for vessels, steam engines, and locomotives (weighing each 25 pounds or over)	per picul	.265
Angles	do	.140
Anvils and parts of	do	.400
Bar	do	.140
Bolts and nuts		5 per ct.
Castings, rough	per picul	.140
Chains and parts of	do	.265
Cobbles and wire shorts	do	.130
Hoops	do	.140
Kentledge	do	.075
Nail rod	do	.140
Nails—		
Wire	do	.200
Other kinds		5 per ct.
Pig	per picul	.075
Pipes and tubes		5 per ct.
Plate cuttings	per picul	.110
Plates and sheets	do	.140
Rails	do	.125
Rivets	do	.250
Screws		5 per ct.
Sheets and plates	per picul	.140
Tacks, blue, of all sizes	do	.400
Wire	do	.250
Iron, galvanized—		
Bolts and nuts		5 per ct.
Cobbles and wire shorts	per picul	.130
Sheet—		
Corrugated	do	.275
Plain	do	.275
Tubes		5 per ct.
Wire	per picul	.250
Wire, shorts	do	.130
Iron, old, and scrap, of any description (fit only for remanufacture)	per picul	.090
Lead—		
Pig	do	.285
Sheet	do	.330
Lead pipes	do	.375

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Metal—Continued.		Hk. taels.*
Nickel, unmanufactured	per picul†	2.600
Quicksilver	do	4.280
Spelter	do	.375
Steel—		
Bamboo	do	.250
Bars	do	.250
Plates and sheets	do	.250
Tool and cast	do	.750
Wire and wire rope	do	.750
Steel, mild. *See* Iron.		
Tin—		
Compound		5 per ct.
Foil		5 per ct.
Sheets and pipes	per picul	1.725
Slabs	do	1.500
Tacks, blue, of all sizes	do	.400
Tinned plates—		
Decorated	do	.350
Plain	do	.290
White metal—		
Sheets	do	2.200
Wire	do	1.500
Yellow metal. *See* Brass.		
Zinc—		
Boiler plates	do	.600
Powder	do	.400
Sheets, including perforated	do	.520
Milk, condensed, in tins	per case of 4 dozen 1-pound tins	.250
Mineral waters	per 12 bottles or 24 half bottles	.050
Mirrors		5 per ct.
Morphia in all forms	per ounce	3.000
Molding	per thousand feet	1.050
Mushrooms	per picul	1.800
Musical boxes		5 per ct.
Musk	per catty‡	9.000
Mussels, dried	per picul	.400
Needles:		
No. 7-0	per 100 mille	1.800
No. 3-0	do	1.500
Assorted, not including 7-0	do	.985
Nutgalls	per picul	.870
Nutmegs	do	1.500
Oakum	do	.500
Oil:		
Castor—		
Lubricating	do	.510
Medicinal	do	1.000
Clove	per catty	.150
Cocoanut	per picul	.400
Colza	per American gallon	.050

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Article	Unit	Hk. taels.*
Oil—Continued.		
Engine—		
(*a*) Wholly or partly of mineral origin	per American gallon	0.015
(*b*) All other kinds (except castor)	do	.025
Ginger	per picul†	6.750
Kerosene	per case of 10 American gallons	.070
In bulk	per 10 American gallons	.050
Olive	per imperial gallon	.062
Sandalwood	per catty‡	.240
Wood	per picul	.500
Oil cans and cases (kerosene) empty	per 2 cans in 1 case	.005
Olives, fresh, pickled, or salted	per picul	.180
Opium	per picul { duty	30.000
	likin	80.000
Husk	per catty	.062
Orange peel	per picul	.800
Oysters, dried		5 per ct.
Packing, asbestus. *See* Asbestus.		
Packing, engine and boiler, all other kinds		5 per ct.
Paints. *See* Dyes, colors, and paints.		
Paper:		
Cigarette, not exceeding 2 by 4 inches	per 100,000 leaves	.125
Printing—		
Calendered and (or) sized	per picul	.700
Not calendered or unsized	do	.300
Writing or foolscap	do	1.200
All other kinds		5 per ct.
Peel, orange	per picul	.800
Pepper:		
Black	do	.760
White	do	1.330
Perfumery		5 per ct.
Phosphorus	per picul	4.125
Pitch	do	.125
Plushes and velvets:		
(*a*) Plushes and velvets of pure silk	per catty	.650
(*b*) Silk seal (with cotton back)	do	.200
(*c*) Plushes and velvets of silk mixed with other fibrous materials (with cotton back)	per catty	.150
(*d*) Plushes, all cotton (including mercerized)	do	.110
(*e*) Velvets, cotton. *See* Cotton piece goods.		
Pork rind	per picul	.500
Prawns, dried (*see also* Shrimps)	do	1.000
Preserved fruits, in glass bottles, jars, cardboard or wooden boxes, including weight of immediate package	per picul	.650
Purses, leather (not including silver or gold mounted)	per gross	.500
Putchuck	per picul	.715
Raisins and currants	do	.500
Rattan:		
Chairs		5 per ct.
Core	per picul	.225
Skin	do	.750

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		Hk. taels.*
Rattans:		
Split	per picul †	0. 325
Whole	do.	. 225
Resin	do.	. 187
Ribbons, silk, silk and cotton, silk and other fibers, with or without imitation gold or silver thread	per catty ‡	. 550
Rope		5 per ct.
Rose maloes	per picul	1. 000
Safflower	do.	. 525
Saki:		
In barrels	do.	. 400
In bottles	per 12 bottles or 24 half bottles	. 110
Saltpeter and nitrate of soda	per picul	. 325
Sand, red	do.	. 045
Sandalwood	do.	. 400
Sapan wood	do.	. 112
Sea-horse teeth		5 per ct.
Seaweed:		
Cut	per picul	. 150
Long	do.	. 100
Prepared	do.	1. 000
Seed:		
Lily (*i. e.*, lotus nuts without husks)	do.	1. 000
Lotus nuts (*i. e.*, lily seeds with husks)	do.	. 400
Lucraban	do.	. 350
Melon	do.	. 250
Pine or fir nuts	do.	. 200
Sesamum	do.	. 200
Sharks' fins:		
Black	do.	1. 608
Clarified or prepared	do.	6. 000
White	do.	4. 600
Shellac	do.	2. 500
Shells:		
Mother-of-pearl	do.	. 700
Other kinds		5 per ct.
Sherry. *See* Wines, etc. (vins de liqueur).		
Shoes and boots, india-rubber (for Chinese):		
Boots	per pair	. 080
Shoes	do.	. 020
Shrimps, dried (*see also* Prawns)	per picul	. 630
Silk piece goods, all silk (including crape):		
(*a*) Plain	per catty	. 325
(*b*) Brocaded or otherwise figured	do.	. 700
Silk piece goods, mixtures (*i. e.*, silk and cotton or silk and other materials, including crape, but not including mixtures with real or imitation gold or silver thread):		
(*a*) Plain	per catty	. 250
(*b*) Brocaded or otherwise figured	do.	. 500
Silver thread, imitation. (*See* Thread.)		

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		Hk. taels.*
Sinews:		
Buffalo and cow	per picul†	0.550
Deer	do	1.050
Singlets or drawers:		
Cotton	per dozen	.125
Mixture		5 per ct.
Skins:		
Fish	per picul	.600
Sharks		5 per ct.
Smalt	per picul	1.600
Snuff		5 per ct.
Soap:		
Household and laundry (including blue mottled), in bulk, bars, and doublets weighing not less than one-half pound each	per picul	.240
Toilet and fancy		5 per ct.
Socks, cotton (including lisle thread):		
First quality (*i. e.*, valued at 1 tael or over per dozen pairs), per dozen pairs		.075
Second quality (*i. e.*, valued at less than 1 tael per dozen pairs), per dozen pairs		.032
Soda:		
Ash	per picul	.150
Bicarbonate	do	.150
Caustic	do	.225
Crystals	do	.120
Crystals, concentrated	do	.140
Soy	do	.250
Spirits. (*See* Wines, etc.)		
Spirits of wine. (*See* Wines, etc.)		
Stick-lac	do	.700
Stout. (*See* Wines, etc.)		
Sugar:		
Brown, up to No. 10 Dutch standard	do	.190
Candy	do	.300
White, No. 11 Dutch standard and over, including cube and refined, per picul		.240
Sulphur and brimstone:		
Crude	per picul	.150
Refined	do	.250
Sulphuric acid	do	.187
Sunshades. (*See* Umbrellas.)		
Telescopes, binoculars, and mirrors		5 per ct.
Thread:		
Cotton—		
Balls, dyed or undyed	per picul	3.000
Spools (50 yards)	per gross	.040
Gold and silver—		
Imitation (on silk)		5 per ct.
Real		5 per ct.
Gold, imitation (on cotton)	per catty‡	.125
Silver, imitation (on cotton)	do	.090

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		Hk. taels.*
Tiles 6 inches square	per hundred	0.600
Timber:		
Beams—		
Hard wood	per cubic foot	.020
Soft wood (including Oregon pine and California redwood, on a thickness of 1 inch)	per 1,000 superficial feet	1.150
Teak wood	per cubic foot	.081
Laths	per thousand	.210
Masts and spars—		
Hard wood		5 per ct.
Soft wood		5 per ct.
Piles and piling (including Oregon pine and California redwood, on a thickness of 1 inch)	per 1,000 superficial feet	1.150
Planks—		
Hard wood	per cubic foot	.020
Teak wood	do	.081
Planks and flooring—		
Soft wood (including Oregon pine and California redwood, and allowing 10 per cent of each shipment to be tongued and grooved, on a thickness of 1 inch)	per 1,000 superficial feet)	1.150
Soft wood (tongued and grooved, in excess of above, 10 per cent)		5 per ct.
Railway sleepers		5 per ct.
Teak-wood lumber of all lengths and description	per cubic foot	.081
Tinder	per picul†	.350
Tin foil		5 per ct.
Tobacco:		
Leaf	per picul	.800
Prepared—		
In bulk	do	.950
In tins or packages under 5 pounds each		5 per ct.
Tools:		
Axes and hatchets	per dozen	.500
Files, file blanks, rasps, and floats of all kinds—		
Not exceeding 4 inches long	do	.040
Exceeding 4 inches and not exceeding 9 inches long	do	.072
Exceeding 9 inches and not exceeding 14 inches long	do	.168
Exceeding 14 inches long	do	.224
Tortoise shell	per catty‡	.450
Trimmings:		
Bead		5 per ct.
Cotton (pure or mixed with other materials, but not silk)		5 per ct.
Cotton (mixed with silk and imitation gold or silver thread)		5 per ct.
Tumeric	per picul	.185
Turpentine	per gallon	.036
Twine		5 per ct.
Ultramarine	per picul	.500
Umbrella frames	per dozen	.080
Umbrellas, parasols, and sunshades:		
With handles wholly or partly of precious metals, ivory, mother-of-pearl, tortoise shell, agate, etc., or jeweled		5 per ct.

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		Hk. taels.*
Umbrellas, parasols, and sunshades—Continued.		
With all other handles—		
Cotton	each	0. 020
Mixtures, not silk	do	.030
Silk and silk mixtures	do	.080
Varnish, crude lacquer, gum lacquer, or oil lacquer		5 per ct.
Vaseline		5 per ct.
Vegetables, dried and salted or pickled, in bulk		5 per ct.
Vermicelli	per picul†	.325
Vermilion	do	4. 000
Vermuth. *See* Wines, etc.		
Watches of all kinds		5 per ct.
Waters, aërated and mineral	per 12 bottles or 24 half bottles	.050
Wax:		
Bees, yellow	per picul	1. 600
Japan	do	.650
Paraffin	do	.500
Sealing		5 per ct.
White		5 per ct.
Wines, etc.:		
Champagnes and all other sparkling wines, in bottles, per case of 12 bottles or 24 half bottles		.650
Still wines, red or white, exclusively the produce of the natural fermentation of grapes—		
(*a*) Having less than 14° of alcohol—		
1. In bottles	per case of 12 bottles or 24 half bottles	.300
2. In bulk	per imperial gallon	.025
(*b*) Having 14° or more of alcohol; also vins de liqueur other than port—		
1. In bottles	per case of 12 bottles or 24 half bottles	.500
2. In bulk	per imperial gallon	.150
Port wine—		
In bottles	per case of 12 bottles or 24 half bottles	.700
In bulk	per imperial gallon	.175
Vermuth and byrrh	per case of 12 liters	.250
Saki:		
In barrels	per picul	.400
In bottles	per case of 12 bottles or 24 half bottles	.110
Brandies and whiskies, in bulk	per imperial gallon	.125
Brandy and cognac, in bottles	per case of 12 reputed quarts	.500
Whisky, in bottles	do	.350
Other spirits (gin, rum, etc.)—		
In bottles	do	.200
In bulk	per imperial gallon	.090
Spirits of wine, in packages of any description	do	.028
Ales, beers, cider, and perry—		
In bottles	per case of 12 reputed quarts or 24 reputed pints	.085
In casks	per imperial gallon	.020
Porters and stouts—		
In bottles	per case of 12 reputed quarts or 24 reputed pints	.100
In casks	per imperial gallon	.025
Liqueurs		5 per ct.

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		Hk. taels.*
Wood:		
Camagon	per picul†	0.090
Ebony	do	.200
Fragrant		5 per ct.
Garoo	per catty‡	.100
Kranjee		5 per ct.
Laka	per picul	.125
Lignum-vitæ		5 per ct.
Puru	per picul	.075
Red	do	.200
Rose	do	.200
Sandal	do	.400
Sapan	do	.112
Scented		5 per ct.
Shavings, Hinoki	per picul	1.000
Woolen and cotton mixtures:		
Flannel (woolen and cotton), not exceeding 33 inches wide	per yard	.015
Italian cloth, plain or figured, having warp entirely cotton and all one color, and weft entirely wool and all one color, not exceeding 32 inches wide and not exceeding 32 yards long	per piece	.372
Poncho cloth, not exceeding 76 inches wide	per yard	.030
Spanish stripes (woolen and cotton), not exceeding 64 inches wide, per yard		.014
Union cloth, not exceeding 76 inches wide	per yard	.030
Woolen and cotton mixtures, unclassed, including alpacas, lusters, Orleans, Sicilians, etc		5 per ct.
Woolen manufactures:		
Blankets and rugs	per pound	.020
Broadcloth, not exceeding 76 inches wide	per yard	.047½
Bunting, not exceeding 24 inches wide and not exceeding 40 yards long	per piece	.200
Camlets, Dutch, not exceeding 33 inches wide and not exceeding 61 yards long	per piece	1.000
Camlets, English, not exceeding 31 inches wide and not exceeding 61 yards long	per piece	.500
Flannel, not exceeding 33 inches wide	per yard	.015
Habit cloth, not exceeding 76 inches wide	do	.047½
Lastings, plain, figured, or craped, not exceeding 31 inches wide, and not exceeding 32 yards long	per piece	.450
Llama braid	per picul	5.000
Long ells, not exceeding 31 inches wide, and not exceeding 25 yards long	per piece	.250
Medium cloth, not exceeding 76 inches wide	per yard	.047½
Russian cloth, not exceeding 76 inches wide	do	.047½
Spanish stripes, not exceeding 64 inches wide	do	.021
Woolens (unclassed)		5 per ct.
Woolens and worsted yarns and cords (not including Berlin wool), per picul		5.300
Berlin wool	per picul	4.000
Wooloa or berlinette	do	3.500
Worm tablets, in bottles, not exceeding 60 pieces	per dozen	.035

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Yarn:		Hk. taels.[*]
Asbestus	per picul[†]	2.250
Coir		5 per ct.
Cotton—		
Bleached or gray	per picul	.950
Dyed		5 per ct.
Gray	per picul	.950
Mercerized or gassed		5 per ct.
Wooloa or berlinette	per picul	3.500
Wool, Berlin	do	4.000
Woolen and worsted (not including Berlin wool)	do	5.300

NOTE.—If any of the articles enumerated in this tariff are imported in dimensions exceeding those specified, the duty is to be calculated in proportion to the measurements as defined.

DUTY-FREE LIST.

1. Foreign rice, cereals and flour, gold and silver (coined and uncoined).
2. Legation supplies from abroad.
3. Supplies for the use of foreign forces, military and naval.
4. Official stationery actually transmitted by foreign government departments for foreign consulates.
5. Supplies under government stores certificates.
6. Materials for railways, the import of which "free" is provided for by agreements antedating the peace protocol.
7. Samples—in reasonable quantities certified for show and not for sale.
8. Circulars, etc., distributed gratis by mercantile houses.
9. The bona fide baggage of travelers, *i. e.*, passenger's luggage arriving either with the owner or by a vessel other than by which the passenger travels.
10. Clothing, books, pictures, and furniture already in use when brought in by residents and not for sale.

N. B.—Ships' coal and provisions are entitled to drawbacks.

RULES.

Rule I.

Imports not enumerated in this tariff will pay duty at the rate of 5 per cent ad valorem; and the value upon which duty is to be calculated shall be the market value of the goods in local currency. This market value when converted into haikwan taels shall be considered to be 12 per cent higher than the amount upon which duty is to be calculated.

If the goods have been sold before presentation to the customs of the application to pay duty, the gross amount of the bona fide contract will be accepted as evidence of the market value. Should the goods have been sold on c. f. and i. terms—that is to say, without inclusion in the price of duty and other charges—such c. f. and i. price shall be taken as the value for duty-paying purposes without the deduction mentioned in the preceding paragraph.

If the goods have not been sold before presentation to the customs of the application to pay duty, and should a dispute arise between customs and importer regarding the value or classification of goods, the case will be referred to a board of arbitration composed as follows:

An official of the customs, a merchant selected by the consul of the importer, and a merchant differing in nationality from the importer, selected by the senior consul.

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Questions regarding procedure, etc., which may arise during the sittings of the board shall be decided by the majority. The final finding of the majority of the board, which must be announced within fifteen days of the reference (not including holidays), will be binding upon both parties. Each of the two merchants on the board will be entitled to a fee of 10 haikwan taels. Should the board sustain the customs valuation, or, in the event of not sustaining that valuation, should it decide that the goods have been undervalued by the importer to the extent of not less than 7½ per cent, the importer will pay the fees; if otherwise, the fees will be paid by the customs. Should the board decide that the correct value of the goods is 20 per cent (or more) higher than that upon which the importer originally claimed to pay duty, the customs authorities may retain possession of the goods until full duty has been paid and may levy an additional duty equal to four times the duty sought to be evaded.

In all cases invoices, when available, must be produced if required by the customs.

Rule II.

The following will not be liable to import duty: Foreign rice, cereals, and flour; gold and silver, both bullion and coin; printed books, charts, maps, periodicals, and newspapers.

A freight or part freight of duty-free commodities (gold and silver bullion and foreign coins excepted) will render the vessel carrying them, though no other cargo be on board, liable to tonnage dues.

Drawbacks will be issued for ships' stores and bunker coal when taken on board.

Rule III.

Except at the requisition of the Chinese Government, or for sale to Chinese duly authorized to purchase them, import trade is prohibited in all arms, ammunition, and munitions of war of every description. No permit to land them will be issued until the customs have proof that the necessary authority has been given to the importer. Infraction of this rule will be punishable by confiscation of all the goods concerned. The import of salt is absolutely prohibited.

STÊNG HSŬAN-HUAI,
LŬ HAI-HUAN,
E. v. HIRSCH,
D. SIFFERT,
DR. BOYÉ,
JAS. L. MACKAY,
E. HIOKI,
M. ODAGIRI,
J. YAMIAOKA,
F. B. v'JACOB,
JOHN GOODNOW,
Special Commissioners.

TRADE CONDITIONS IN JAPAN.

Minister A. E. Buck sends from Tokyo clipping from the Japan Times, containing a report by Mr. A. H. Lay, secretary of the British legation, which reads, in part:

The foreign trade of Japan for the year 1901 was marked by many unfavorable features, but there was at the same time a distinct recovery from the evil conditions from which it suffered during the previous year. The withdrawal of foreign troops from North China and the return of the court to Pekin led to a renewal of business relations with China, which had been greatly interfered with during the troubles. The rice crop was plentiful, and the season was a most successful one in the matter of raw-silk export. The outflow of specie was checked. Stocks of all descriptions of goods had, by the end of the year, fallen to a normal level, and signs were not wanting to indicate the approach of a period of steady trade.

No little apprehension was excited at the beginning of the year 1901 by the fact that the foreign trade of Japan in 1900 had resulted in a balance unfavorable to the country of £8,450,000 ($41,122,000) and an outflow of specie amounting to £4,610,000 ($22,435,000). That one of the most potent causes of the existing circumstances had been excessive Government expenditure was obvious, and in order to provide a remedy, modifications of the programme laid down after the war with China and other measures were adopted. This policy and the general contraction of credit naturally following upon a period of overtrading had their due effect, and the year under review brought approximate equivalence between imports and exports. The process was attended by the suffering incidental to a contraction of credit and currency. Bankruptcies and failures to meet engagements were numerous among the smaller merchants; but the more important mercantile and financial institutions of Japan passed successfully through the ordeal, with one or two exceptions of no great moment. Rates of interest were extraordinarily high, and companies of good standing were obliged to offer over 9 per cent per annum to raise funds on their debentures. Sound establishments have to pay for the "short views" taken by so many manufacturers and merchants, who, for the sake of present large profits, so often neglect future prospects.

IMPORTS.

Cottons.—From British India came considerably more than one-half of the raw cotton consumed. Both the United States and China had a very largely decreased volume of imported cotton. The trade in cotton yarns is practically finished. British coarse counts were long ago displaced by the products of spinning companies all over the country, and now the Nippon Bōseki (Osaka), Ichinomiya (Owari), Ejiri (near Oyama), and Tokyo gassed yarn companies supply most of the demands of Japan for fine spinnings.

Metals.—Business in metals was bad, and stocks held by the local Japanese and foreign merchants at the end of the year were large. This, taken in conjunction with the very low prices ruling in Europe at present, makes the position of the importer and retail seller one entailing great loss, as most of the material held in stock in Japan at present was purchased when the prices in Europe and America were at least 30 per cent higher than they are now.

The Yasuda Wire Nail Factory in Tokyo, destroyed by fire in 1900, has been rebuilt and is once more in working order.

The formal opening of the Government iron foundry, near Wakamatsu, took place on November 18. Up to the time of starting the works, about £2,000,000 ($9,730,000) had been expended. Work at the foundry was actually commenced on a small scale in February by the manufacture of pig iron, and in May, Siemen's steel was also produced. The manufacture of small and medium rails and plates was commenced in June. From 1902, it is proposed to use ore obtained from Akadani in Echigo.

The Government has again laid before the Diet proposals for the projected steel works at Kure for naval requirements; £647,000 ($3,148,000) are to be expended over a period of four years. Armor plates and steel for heavy guns are to be manufactured at this new establishment, and as imported material will not come into competition with its products, it is very likely to prove a success.

Sugar.—The new duty was put in force on October 1. The consequence was the importation of an abnormally large amount of sugar during the first nine months of the year, and the figures for 1901 were higher than ever before. The countries which chiefly benefited thereby were Hongkong, Germany, and Austria-Hungary. Large quantities of sugar also came from the Dutch Indies, the Philippines, and China.

Kerosene.—The International Oil Company, which was formed for the purpose of working the Japanese oil fields, couched its report, which was submitted at the first ordinary general meeting of shareholders on October 31, 1901, in hopeful terms. Although the company had not yet existed for a year, it was held that the progress already made had been satisfactory. There has been from time to time talk of the formation of a Japanese oil company for the purpose of competing with the International Oil Company, and the rumor has recently again become current. Some eighteen companies are said to be about to amalgamate to this end, with a capital of about £180,000 ($876,000).

During the year, some of the leading newspapers, one in particular, reverted to the subject of the immediate abolition of the conventional tariffs. It was pointed out that they hamper the commercial freedom of Japan, and prevent the conclusion of reciprocal agreements with other countries in regard to commodities in which they and Japan are mutually interested.

British trade.—The imports from the United Kingdom of cotton yarns, shirtings and cotton prints, cotton satins and cotton velvets, Italian cloths, flannels, woolen cloths, locomotive engines, railway carriages, bar iron, rails, iron and steel (other), and paper are all less than in 1900. In fact, the import trade from the United Kingdom to Japan diminished by about 30 per cent.

A large order was placed by the Yokosuka dock authorities with British manufacturers for galvanized steel of a special quality for building four torpedo boats. At the Kure dockyard, some torpedo boats are also being built, but as these craft are to be of the Norman type, the material for their construction is coming principally from France. The engine forgings, including the shafting, were also ordered from French makers, although they were offered at a lower price by British competitors, the reason being that, as the vessels were to be of French design, it was thought better by those concerned in the building to procure French material. The moral is that orders taken by British or other shipbuilders not only benefit at the time the country where the vessels are built, but also pave the way for the subsequent supply of material for the same country for similar boats which are constructed in Japan. This is a most important point, of which sight ought not to be lost by the British manufacturer. The bulk of the material entering into the construction of men-of-war and merchant ships built in Japan still continues to be British.

German trade.—The fact that there was not a large decrease in the imports from Germany is attributable more especially to the enormous quantity of sugar—almost three times as much as during the previous year—which was brought from that country in order to escape the higher duty leviable from October. German machinery, engines, and iron (bar and rod) likewise were in much greater demand in Japan. Wool, flannels, and woolen cloths had a decreased importation. Paper had also a diminished sale, but was still represented by higher values than in 1899.

French trade.—Owing to the diminution in the importation of mousseline de laine, the French import trade declined considerably. Exports to France were in a flourishing condition.

United States trade.—Imports from the United States were much less in 1901 than in 1900. This was chiefly because of the falling off in the quantity of raw cotton imported from America. A very large increase is at the same time observable in the importation of kerosene oil, brought about in anticipation of the doubling of the import duty from October 1. In locomotive engines and machinery and other engines and iron and steel, there was also a noticeable increase, but in the matter of rails and nails, the United States for the time fell back. Six American locomotives were ordered for the Hokkaido government railways and a number for private institutions in the main island and Kiushiu. The Government railway bureau for the main island had specified for British locomotives only for some years past, but the last tenders, opened about the end of 1901, included one American maker—the Schenectady Locomotive Works—and four British makers. The order went to the United States, the cheapest British price for all thirty locomotives being £86,700 ($422,000); the amount for which the contract went is £77,400 ($376,600). This is the first time that the Government has placed British and American makers in competition on the same specification. The specification was just such a one as British makers had been asking for, yet they were beaten in the contest. No doubt, however, they could have supplied a better finished and higher class machine than will be furnished.

Bridge work.—The tendency of the Government railway department for the past year has been to specify for American makers only for material for bridge work where trussed bridges are concerned. A good deal of iron and steel, amounting to about 1,500 tons, has been ordered by the city of Tokyo to enter into the construction of road bridges for the capital. There is a constant demand for material for this purpose, as the city authorities are gradually changing all the more important bridges from wood to metal. The material is imported in the form of bars and plates cut to the exact sizes required by the city engineer, and then the work of making and erecting the bridge is given to one of the local engineering establishments.

Bicycles, etc.—The Japanese have within the last few years gone in extensively for bicycles. The Americans still continue to obtain practically all the trade. American-made bicycles are sold at retail in this country at anything from £5 to £18 ($24 to $87). There are very few British machines to be seen; in fact, the scarcity of them makes it difficult to get repairs done to British tires. There are about four automobiles in Tokyo—all of American make. It is doubtful if there will ever be much of a demand for these machines in Japan.

EXPORTS.

For 1901 the volume of exports, which discloses an increase almost every year, was larger than that for any preceding year, not excepting 1889, which previously held the best record as regards exportation. This was, in the first place, caused by the ample supply of raw silk shipped from Japan, and, secondly, by the surplus of rice from the good harvest of 1900 ready for sale abroad. But silk tissues, matches, mats, marine products, copper, and camphor all went to assist considerably in raising the export values for the year.

Rice.—Owing to favorable weather at the critical time, the rice crop of 1901 was a plentiful one, and larger than that of 1900. The yield is estimated at 221,079,691 imperial bushels, one of the best for some years. Compared with the previous year, the market price of rice reached a higher point, owing to speculation in the late summer.

Camphor.—The exports of camphor, as of most agricultural products, showed a considerable increase. The United Kingdom, the United States, Hongkong, Germany, and British India are the principal consumers.

Silk.—The export trade in Japanese silk for 1901 was a most satisfactory one, and very high figures were reached. This state of affairs was due to the large stock of 20,000 bales carried over from the previous year, and to the exceptional bulk of the business done during the second half of the past twelve months.

Tea.—The quantity of tea exported in 1901 was greater than in 1900, although the price received was less; but at the same time the trade was above that of an average year. Compared with a few years ago, prices were still satisfactory to the producer.

Cotton yarns.—The chief outlet for Japanese cotton yarns (China) being again open, the cotton-spinning industry received renewed encouragement, and the number of bales exported was larger than in 1900. The trade with China increased by 20 per cent, but in the case of Korea and Hongkong no small falling off is observable. The Philippine Islands took a larger quantity than during the previous period. The home demand was by no means brisk.

Gunboats.—For a number of gunboats for service in the Philippines, on account of which the United States Government recently asked for tenders, four Japanese shipbuilding companies competed. The Uraga Dockyard, tendering the second lowest bid, succeeded in obtaining an order for five small composite gunboats. They are to cost about £5,600 ($27,200) each.

Chinese trade.—Trade with China naturally revived on the restoration of order in that Empire. Exports from Japan thither were actually larger in volume in 1901 than they were in 1899, before the trouble arose. Cotton yarns and tissues, matches, European umbrellas, seaweeds; and other marine products, and coal in particular, were marked by a considerable expansion in export as compared with the preceding year. One illustration may be cited out of many of the attention being devoted, industrially and commercially, both to China and Korea. A bill has just been passed by the Diet providing for the exemption of persons proceeding to these two countries from the operation of the law for the protection of emigrants. The purpose is to encourage, or at least remove obstacles from the path of, Japanese who wish to betake themselves to China and Korea to engage in labor. The Japanese are determined to do their best to develop their trade with Korea, and to maintain and increase their commercial interests in the peninsula.

SHIPPING.

Most of the ports, following the course of trade for the year, show a decrease in the volume of imports and an increase in exports. On the whole, the new open ports display a tendency toward development. The trade and shipping of Shimonoseki, however, have, according to the customs returns decreased to the benefit of the growth of Moji, the port opposite in the island of Kiushiu.

A Japanese steamship line is expected to inaugurate a service between the ports of Vladivostock and Tsuruga, in Echizen about 480 miles, in February, 1902, placing two steamers of 1,600 or more tons on the run. It is also reported that the Russians will shortly extend their East Asian steamship service to Tsuruga, and run steamers thither from Vladivostock. In view of the situation of the port of Tsuruga, comparatively close to the terminus of the Siberian Railway, it would appear to have a promising commercial future before it on the establishment of regular steamship communication with the continent of Asia.

Subsidies.—In March, 1901, the grant of fresh shipping subsidies was announced. These are for the encouragement of steamship lines running to Australia and Bombay, and also to increase the efficiency of the steamship service in the Sea of Japan and along the coasts of the Hokkaido. For the Australian Line, the amount of the subsidy is not to exceed £53,660 ($260,900) annually for five full years from April 1, 1901, till March 31, 1906. The subsidy for the Bombay Line is to be not more than £18,250 ($88,800) annually for a similar period. The number of trips to be performed is twelve in each case. For the Sea of Japan Line, between Japanese ports and Korea and Russian Asia, the sum of not more than £15,312 ($74,500) annually for the five years just mentioned is to be appropriated. In the case of the

Hokkaido routes, a subsidy is granted up to £3,885 ($18,900) annually for five full years from April 1, 1901, till March 31, 1906, for the Wakanai-Abashiri, Otaru-Teshio, and Ishikari River lines; and of not more than £2,516 ($12,250) annually for five full years from October 1, 1901, till September 30, 1906, for the Hakodate-Otaru Line. A guaranty is to be furnished in respect to each of the lines which are to be subsidized, amounting to about 10 per cent of the subsidy in question.

Japanese shipping.—The number of Japanese-owned vessels and their tonnage showed a further increase in 1901. Under the Japanese flag there are now 969 steam vessels of 577,660 tons and 3,565 sailing vessels of 326,618 tons, making a total of 4,534 vessels of 904,278 tons.

The Nippon Yusen Kwaisha, the chief steamship line in Japan, is losing no opportunity of extending and improving its services, and is gradually occupying a position of more and more importance. Its fleet was increased in 1901 by five large, new steamers. The fourth steamer built for this company at the Mitsu Bishi yard at Nagasaki, likewise of 6,000 tons burden, was launched on August 24. This time, the cost of construction was not so great, and the result was satisfactory to the builders. On the first two occasions, a loss was incurred, and the third time, though no loss appeared, there was at the same time no profit made. These facts were emphasized by the director of the yard on the occasion of the launching of the last steamer.

GENERAL.

Foreign capital.—Scarcity of capital available in Japan for Government and private enterprises was perhaps realized more clearly in 1901 than ever before. The people were compelled to follow the example of the Government and postpone as far as possible new undertakings. The thought in the minds of many of the people prior to the revision of the treaties, that foreign money and enterprise were merely awaiting the opening of the country and would then invade Japan in a manner that might even be prejudicial to the national interests, is now recognized to have been an idle fancy. The question now is how to tempt the investment of such capital on terms that appear satisfactory to the Japanese would-be borrowers themselves. Further efforts were made both by the Japanese and by foreigners interested in the commercial and industrial development of the country to relieve the financial pressure by the introduction of funds from abroad.

Private railway companies, in particular, stand in need of working capital at moderate rates of interest, and the question of foreign money being utilized in railway enterprise attracted much attention during the year. To an inquiry addressed to the Minister of Communications in June by the Hoku-Etsu Joint Stock Railway Company, as to whether the holding of mortgages on railways was limited to Japanese or extended likewise to foreigners, his excellency replied on September 12 to the effect that the subjects or citizens of all nations which had treaties with Japan containing stipulations similar to those found in articles 2 and 3 of the treaty concluded between Japan and Switzerland, enjoyed the right to hold mortgages on immovables. This official announcement consequently appears to settle the question in the affirmative in the case of most of the nations which have dealings with Japan. It is hoped that British and other foreign capital may now be available to assist in railway extension in Japan, and negotiations are on foot for that purpose. The point of difficulty is the question of security. Foreigners can not own land in Japan, and in the event of foreclosure they would have to accept any price that might be obtained for it at public auction. In the case of mortgages on land, foreigners can indeed apply for a resale, if dissatisfied, but they must then take the responsibility for the difference between the sum offered at the first sale, plus one-tenth, and the price it actually brings at the subsequent auction, if the mortgage immovable fails to realize a price higher by one-tenth or more than was originally offered.

Public opinion in Japan seems gradually coming round to believe in the wisdom of removing the disability on the part of aliens to own land. On September 9, the Tokyo Chamber of Commerce decided unanimously to petition the Government to concede the right of land ownership and of engaging in mining, and appointed a committee to approach the authorities on the subject.

There is nothing, however, to prevent foreigners from carrying on, as juridical persons formed for that purpose in accordance with Japanese law, a private railway under a license from the Government. It has been found that foreign companies in Japan can be carried on at less cost and with greater efficiency than similar firms conducted by Japanese. Thorough local knowledge on the part of the managing directors and hearty Japanese cooperation on the part of the staff would, of course, be essential to success. It is doubtful, however, if they would be able to overcome all the obstacles with which they would find themselves confronted, the chief of which would arise from local prejudice.

It may be added that four railway companies—the Kiushu, Hoku-Etsu, Hankaku, and Sanyo—have made a provisional contract with a British firm for a loan. These railways have united to pay the fee and expenses of a railway expert sent from the United Kingdom by a well-known capitalist to investigate the condition of the lines in regard to the question of the loan. A bill is at present before the Diet to provide for certain alterations in the railway law, so as to enable a lender or mortgagee to enter into possession for the purpose of carrying on a railway which has failed to meet its obligations, etc.

Mines.—With regard to the question of mining privileges, also, it is feared by those who look for the investment of foreign capital in Japanese mines, that the provisions of law are not sufficiently liberal to act as an inducement. Their desire, therefore, is to see foreigners in free enjoyment of the right as individuals. A foreigner is entitled at present to hold a mortgage on a mine. Supposing, however, that the license to work the mortgaged mine were for some reason or other canceled, the mortgagee would have no recourse except against the mortgagor himself. He might, indeed, apply to the authorities within a certain time for permission to carry on the mine as a juridical person. But a mortgage upon this particular kind of property does not appear a tempting investment.

THE SOOCHAN MINES AND RAILROAD.

Admiral Şkrydloff, of the Russian Pacific squadron, has returned from a visit to the Soochan coal mines, where he went to inspect the plans of the proposed railroad, which will facilitate the working of the mines and the transportation of the coal to Vladivostock. Without the railroad, transportation would be difficult and expensive—45 to 50 kopecks (23.1 to 25.7 cents) per pood (36.112 pounds). By rail, the cost per pood will not exceed 12 kopecks (6.1 cents), including all expenses. The Pacific squadron uses Sakhalin coal, at 30 kopecks (15.4 cents) per pood, delivered. This coal has too much sulphur and needs assorting. The Naval Ministry has been interested in the Soochan mines for years. In addition to the low price, the coal is said to be smokeless. It is said that there are several veins which appear similar in quality and character. There is little ashes; the coal burns freely and gives a large percentage of heat.

The working of the mine was estimated as easy. The Ministry of Ways and Communications decided to construct the railroad, with the help of the Naval Ministry, 600,000 rubles ($309,000) being appropriated, but the tunnel obstacle ended the project for a time. The first plan was a narrow-gauge road, but now a wide gauge is proposed, with no tunnel. The new line will run through a country comparatively rich. It is thought it can be completed within a year. The work at the mine and also on the railroad can be done best in winter, when material and labor are cheap.

R. T. GREENER,
Commercial Agent.

VLADIVOSTOCK, *August 2, 1902.*

CANADIAN COMMERCE IN 1902.

The latest publication of the Department of Trade and Commerce shows a great increase in Canada's trade during the twelve months ended June 30, 1902. The aggregate commerce was $414,431,831, against $379,243,773 in the preceding year; increase, $35,188,058. The increase was largely in the imports of goods entered for consumption. The imports for the two fiscal years were: In 1902, $202,791,595; in 1901, $181,225,369; increase in 1902, $21,566,226.

The exports from Canada were: In 1902, $211,640,286; in 1901, $198,018,404; increase in 1902, $13,621,882.

IMPORTS.

The origin of imports was:

Country.	1901.	1902.
Great Britain	$43,285,126	$49,215,693
United States	110,443,802	120,809,956
Other countries	27,496,441	32,785,946
Total	181,225,369	202,791,595

Breadstuffs.—Canada imports a fairly large quantity of breadstuffs, such as arrowroot, rice, corn, wheat flour, etc., though they do not contribute largely to the revenue, being almost entirely free. In 1902, these importations fell to $4,287,727, being a decrease of $3,782,769 from 1901, entirely in corn from the United States. This is explained by the fact that Canada has had unusually good crops. This corn is largely used for ensilage, and the importation has been decreasing since 1898.

Cotton.—In cotton and its manufactures, the value of the imports has steadily increased for many years, and the increase is maintained in 1902, being $1,474,041, and the total amounting to $13,775,940.

Of this last amount, Great Britain supplied $5,378,300 and the United States $7,653,179. Looking back over five years, it appears that importations from Great Britain are gradually approaching in value those from the United States, apparently on account of the preferential tariff.

Flax, etc.—In flax, jute, hemp, and their manufactures, the importations have grown from $3,418,518, in 1901, to $4,359,839, of which $3,350,822 came from Great Britain.

Furs.—In 1902, Canada imported $600,000 more furs than in the previous year, the amount being $2,970,754, of which Great Britain supplied $701,055, the United States $1,175,133, Germany $769,061, and other countries $325,506. This trade seems to be steadily increasing, as six years ago the total importations were only $901,571. Manufactures of furs were apparently in great demand in Great Britain, as the trade increased half a million dollars.

Hides and jewelry.—The importation of hides has increased $1,000,000, while that of jewelry, which comes next on the list, has increased just $100,000. The importations of jewelry only amount to $647,200.

Iron and steel.—In the importation of iron and steel, there is an increase of over $6,000,000, while the shipments from Great Britain have nearly doubled.

The figures for this item show:

Country.	1901.	1902.
Great Britain	$3,402,898	$6,395,972
United States	23,110,652	24,594,486
Germany	307,160	565,170
Other countries	359,655	1,727,001
Total	27,180,365	33,282,629

Practically, the whole increase in metals for the year is found in these items.

Spirits and tobacco.—Canada consumed $1,995,938 of spirits and wines in 1902, being $74,420 more than in 1901. Great Britain and France reap the benefit. In 1901, tobacco to the value of $2,158,776 was imported, but in 1902 this amount had grown to $2,413,404.

Wool.—Of raw wool, there was $1,374,054 worth imported in 1902, against $1,292,895 in the previous year. In woolen manufactures, the figures rose from $10,064,654, in 1901, to $11,197,733, in 1902.

EXPORTS.

For the exports of Canada in 1902, only unrevised figures are so far available.

Live stock.—In the first item (horned cattle) there was an increase of $1,600,000—all in exports to Great Britain. The war in South Africa caused an increase of $204,460 in the value of horses exported to Great Britain, while Canada's exports to the United States increased $18,154, and to other countries $324,286. The figures for the two years are:

Country.	1901.	1902.
Great Britain	$230,295	$434,755
United States	327,294	345,448
Other countries	352,684	676,970
Total	910,273	1,457,173

Sheep did not do so well, there being a slight falling off in the trade with the United States, which is not counterbalanced by an increase in the British trade.

Breadstuffs.—Breadstuffs show an increase of $9,000,000, wholly in wheat. In indian corn, corn, oats, pease, rye, and other grain there has been a decrease; but in wheat there is an enormous gain (entirely with Great Britain), the total being $18,024,257.

The total figures for breadstuffs are:

Country.	1901.	1902.
Great Britain	$15,038,645	$23,985,897
United States	781,982	645,796
Other countries	3,416,154	3,583,626
Total	19,236,781	28,215,319

Cottons.—The exports of cotton goods have increased to $380,000, being almost entirely with "other countries," where the trade has more than doubled, while with Great Britain it has increased $30,000, and with the United States it has decreased $55,000.

Fish.—The trade in dry-salted fish with Great Britain has more than doubled, and with the United States there is a healthy increase. The figures are:

Country.	1901.	1902.
Great Britain	$61,023	$122,119
United States	669,807	724,484
Brazil	434,184	435,037
British West Indies	741,273	722,809
Cuba	227,606	211,760
Other countries	627,583	945,465
Total	2,761,481	3,161,674

The exportation of canned salmon to Great Britain has enormously increased, and a trade has begun with Australia which took $175,953 worth last year. The whole trade has increased $2,100,000.

Butter.—Canadian butter, also, is in favor in Great Britain, as well as elsewhere. The following shows the exports:

Country.	1901.	1902.
Great Britain	$3,142,353	$5,459,300
United States	5,839	41,149
Newfoundland	4,429	47,066
Other countries	103,042	113,026
Total	3,265,663	5,660,541
Increase		2,404,878

Eggs.—There was only a slight increase in the export of eggs. The figures are:

Country.	1901.	1902.
Great Britain	$1,677,727	$1,691,024
United States	6,529	35,764
Other countries	7,384	6,454
Total	1,691,640	1,733,242

Meats.—Bacon and hams show an increase of $600,000 in shipments to Great Britain, the total to that country being $12,357,948.

Wool.—Unmanufactured wool shows a considerable increase. The total exports were $31,985,631, of which Great Britain took $14,113,540; the United States, $15,426,487; and other countries, $2,445,604.

TRADE BALANCE.

The following table shows that Canada receives one-half more goods from the United States than from all other countries, and sells to Great Britain one-quarter more goods than she sells to all other countries:

Country.	Imports.	Exports.
Great Britain	$49,215,693	$109,348,245
United States	120,809,956	66,566,835
Other countries	32,765,946	20,104,683
Total	202,791,595	196,019,763

FELIX S. S. JOHNSON,
Commercial Agent.

STANBRIDGE, *October 14, 1902.*

LUMBER INDUSTRY IN BRITISH COLUMBIA.

The lumber business in this Province is prosperous just now. A few months ago, the provincial government placed an export duty upon all logs sent from this Province to the United States; this applies only to logs cut from Government lands. Lands in the hands of private owners, or crown-granted lands, are not affected by this regulation. Nevertheless, the placing of this export duty on logs has increased the number of mills here very considerably, especially shingle mills. One mill cuts 1,250,000 shingles daily. These are red cedar shingles, and a large portion of the output is shipped to the United States.

An agent of one of the lumber mills has just stated that he has orders booked that will take him eighteen months to fill. There is a great lack of men; he says that five or six thousand men could find employment in the lumber and shingle mills and in the logging camps. The wages are probably lower and the cost of living higher than in the adjoining State of Washington; still, if men accustomed to lumbering work are out of employment, there is little doubt they can find it here.

Of course, there is a contract-labor law here, as in the United States, and it will be impossible for men to make contracts in advance; but I have very little doubt that competent lumbermen, able to handle mill machinery or to do good work in the woods, can find employment in this vicinity if they come.

The destruction of timber in Washington and Oregon by the recent fires causes the people here to hope that they may find a larger market than heretofore for their timber in these States, notwithstanding the export duty.

L. EDWIN DUDLEY,
Consul.

VANCOUVER, *September 29, 1902.*

SEPTIC-TANK SEWAGE SYSTEM IN VANCOUVER.

About two years ago, the city of Vancouver adopted the septic-tank system for the disposal of its sewage. There are three tanks, located at different points in the city. One of these disposes of the sewage of a district having a population of 5,000 people.

The tanks are covered, as the bacteria work in the dark. On a recent visit, I found a scum between two and three inches thick over the surface of the tank; this scum, I was informed, is composed of the little microscopic insects which consume all the solid matter. The tanks had been in full operation for about eighteen months, only clear water had been discharged, and yet there was but a small layer, less than one-half of an inch thick, of ash remaining at the bottom of the tanks.

The officers of several municipalities in the near-by States have examined this system and found it so satisfactory that, I am informed, they will recommend the introduction of the septic tanks in their cities. The system is in use at Urbana, Ill.

I shall be glad to procure further information for anyone who may be interested in adopting this system.

L. EDWIN DUDLEY,
Consul.

VANCOUVER, *October 2, 1902.*

PATENTS, TRADE-MARKS, AND COPYRIGHTS IN CUBA.

Minister H. G. Squiers sends from Habana, September 30, 1902 (in reply to inquiries on the subject), translation of a note from the Department of State and Justice, stating that United States patents and trade-marks registered in Cuba under circulars Nos. 12 and 21 of the Division of Customs and Insular Affairs of the War Department, Washington, are now duly protected without the necessity of further formalities.

Mr. Squiers also transmits a brief by Mr. Fernando M. Vidal (formerly General Wood's legal adviser), in regard to the Cuban law governing patents, trade-marks, and copyrights, and copies of the military orders to which he makes reference, all of which follow:

TRADE-MARKS.

The law of trade-marks of the island of Cuba is contained in the royal decree of August 21, 1884, which has undergone certain modifications made by circulars of the Division of Customs and Insular Affairs of the War Department and by civil orders issued by the military government of the island of Cuba.

Circular No. 12 of the Division of Customs and Insular Affairs, dated April 11, 1899, which is applicable to both patents and trade-marks, provides protection for American patents and trade-marks upon filing a duly certified copy of the patent or of the certificate of registration of the trade-mark, print, or label, in the office of the Governor-General of the island. Provision is also made for the protection of rights of property in patents and trade-marks secured under the Spanish laws.

Circular No. 21 of the Division of Customs and Insular Affairs, dated June 1, 1899, provides that the fee for filing the certified copies mentioned in circular No. 12 shall be $1, and that as to patents, the only certification required is that issued by the United States Commissioner of Patents.

On September 25, 1899, circular No. 34 was issued by the Division of Customs and Insular Affairs, applicable to both patents and trade-marks, rescinding so much of circular No. 21 as required the payment of a fee for filing certified copies of patents or certificates of registration of trade-marks, prints, or labels.

A paragraph is added to circular No. 21 requiring a power of attorney from the owner of the patent or trade-mark authorizing another for him, and in his place, to file a certified copy of the patent or certification of the trade-mark, print, or label, to be filed with such certified copy or certificate of registration. It is further provided that assignments of patents, trade-marks, prints, or labels, or certified copies thereof, shall be filed in the same manner.

By a subsequent circular, No. 38, of the Division of Customs and Insular Affairs, dated March 9, 1900, so much of circular No. 34 of the said division as related to fees was rescinded, thereby restoring the registration fee of $1 provided for by circular No. 21, in relation to American patents and trade-marks.

Upon this question of registration fees for American patents and trade-marks, the Secretary of Agriculture, Commerce, and Industries, under date of June 21, 1902, issued a circular order which was published in the Gaceta de la Habana, on June 23, 1902, wherein it is recited that—

"The military government of the United States in this island having ceased, by virtue whereof and in accordance with the express text thereof, circulars Nos. 12 and 21, dated, respectively, April 11 and June 1, 1899, issued by the Division of Customs and Insular Affairs of the War Department at Washington, concerning the registration of American trade-marks and patents, have become without value or effect, inasmuch as said circulars were issued for the territories subject to military forces of the United States, I have resolved that patents and marks of all kinds, prints, labels, and tickets, duly registered in the Patent Office of the United States, whose filing in this island may be requested for their protection in future, shall from the present date be recorded in the bureau under my charge in proper case, upon complying with the procedure followed for registration from other countries, and the payment of $35 currency for patents, and $12.50 currency for marks, prints, etc.—that is to say, the same fees which are paid by all others, foreign or national, in place of $1 currency, which is provided for in said circular No. 21, regarding the American."

Civil order No. 160, series 1901, issued under instructions of the Secretary of War, provides for the protection of patents, copyrights, trade-marks, prints, or labels, the rights to which are secured by proper filing under the United States law, upon filing with the governor of the island where protection is desired a certified copy of the patents, copyright, or certificate of registration.

In an unpublished communication, dated August 12, 1902, addressed to the Secretary of State and Government by the Secretary of Agriculture, Commerce, and Industries, a ruling is contained to the effect that "civil order No. 160, series 1901, June 13, 1901, has not been revoked, and that American trade-marks which have been registered in pursuance of circulars 12 and 21 of the Division of Customs and Insular Affairs are fully protected without the necessity of any further formality, and that the circular published in the Gazette on June 23, 1902, has had for its object the equalization of procedure followed in this island for the filing and protection of foreign trade-marks and patents in accordance with the international treaty of 1883, and that, upon the expiration of the term of protection granted to marks, etc., registered under circulars 12 and 21, above mentioned, the Department reserves the right to take the proper steps. This will be the subject of a law."

At this point it seems proper to invite attention to civil order No. 148, series 1902, whereby "each and every of the laws, decrees, regulations, orders, and other rulings made and promulgated by and under the military government of Cuba shall be deemed to be general and continuing in character, and to be applicable to and binding upon all officers of the Government of Cuba, under whatsoever names or titles, who shall succeed the officers of the military government, and to continue in force and effect, under whatsoever government may exist in Cuba, until such time as it may be legally revoked or amended, pursuant to the terms of the constitution aforesaid."

Article 10 of royal decree of August 21, 1884, has been amended by civil order No. 105, series 1901, so as to read as follows:

"The certificate of ownership of any mark, design, or industrial pattern can only be obtained, for the purposes of this decree, by manufacturers, merchants, agriculturists, or by persons engaged in any other industry, whether they be Cubans or foreigners established in Cuba, and also by companies composed of any such persons."

Article 12 of said royal decree of August 21, 1884, has been amended by civil order 512, series 1900, dated December 19, 1900, by adding to paragraph 1 of said article the following:

"Those who buy or sell receptacles, stamped in a permanent manner with a trade-mark which is registered in the name of another person, except to such person or his authorized agent, or who use such receptacles, placing therein for sale the same or similar products as those for which said receptacles are used by the owner of the trade-mark. In such cases, the receptacles shall be seized, which the infringer shall forfeit to the owner of the trade-mark."

The said article of said order amends article 287 of the penal code by extending the penalty therein provided to this offense.

Article 28 of said royal decree of August 21, 1884, is amended by civil order 18, series 1901, by substituting therefor:

"The petitioner shall pay for fees on the issuance of the title or ownership $12.50 United States currency; said payments shall be made at the proper office of finance within a term of thirty days from the date of the notification of the concession of the trade-mark, design, or industrial model to the party concerned, under penalty of forfeiture; presenting at the Department of Agriculture, Commerce, and Industries the document attesting such payment, so that said Department may issue the title mentioned, which shall be entered on the register opened for such purpose at the bureau of commerce and industries of said Department.

It is further provided in said order that a term of forty-five days from its publication be allowed for those who have obtained concession of trade-marks, designs, etc., and have not obtained titles, to pay the fees and secure the title. A further clause provides that the use of trade-marks, designs, or industrial models, without title, shall be fined as provided in article 39 of the royal decree of August 21, 1884.

Article 36 of said royal decree of August 21, 1884, is amended by civil order 511, series 1900, by substituting for paragraph 2 thereof the following:

"Manufacturers merchants, agriculturists, and industrials applying for registration of the same mark, having distinguishing minor details, with the object of pointing out the various classes and grades of one product, or for any other motive, shall be furnished with a certificate of registration for each variation of the mark, stating their special use and charging them the corresponding fees ($12.50 United States currency) for each certificate issued."

PATENTS.

The law of patents of Cuba is contained in the royal decree of June 30, 1833, which was modified by the royal order of January 17, 1873, which prohibited the concession of "Patents of Introduction."

By civil order 196, series 1899, the rules pertaining to the issuance of letters patent in the island of Cuba, as promulgated by the royal decree of June 30, 1833, are modified so as to substitute one sole term of seventeen years instead of the three terms contemplated by said decree, and the Government fees, as provided in said decree, are abolished, and one uniform fee of $35 is substituted therefor.

The circulars of the Division of Customs and Insular Affairs, hereinbefore cited in reference to trade-marks registered in the United States and seeking protection in Cuba, have application also to American patents under like circumstances; and the circular above mentioned—of the Secretary of Agriculture, etc., dated June 21, 1902—is likewise applicable to patents.

Civil order 216, series 1900, provides for the filing of duplicates of Spanish patents and contains also the following clause:

"American patents already forwarded for registration, and those that may hereafter be forwarded, may at once be entered in the special register in the office of the Secretary of Agriculture, Commerce, and Industry, conditionally, reserving the decision in regard to the definite inscription or absolute rejection of such as are determined to be infringements in accordance with the proofs of the same within the period of six months, as provided in paragraph 1 of this order; upon the expiration of which period the inscription will be made in full, leaving to the parties concerned, after that date, the right of settling their differences before courts of justice."

Under civil order 497, series 1900, a further modification was introduced as follows:

"The requirements of order 216, series of 1900, from these headquarters, referring to American letters patent, are hereby extended to Cuban letters patent, as well as to those granted to other nations; in consequence, letters patent forwarded for registration, which may appear as infringing on Spanish patents, shall be entered in full in the register of the Department of Agriculture, Commerce, and Industries, if, within the period of six months granted by said order No. 216, the owners thereof have not exhibited the duplicates of models, plans, and specifications of the same, for the necessary examination and decision in case of said infringement.

"The inscriptions in full of Cuban and foreign letters patent shall be made in every case as directed for American patents, leaving the right to the owners of Spanish patents to settle their differences before the courts of justice."

Civil order 160, series 1901, issued under the direction of the Secretary of War, and hereinbefore cited in relation to trade-marks, has application also to patents.

The plans and specifications are required to be presented in closed and sealed envelopes, which are to be opened only by the examining board when about to pass upon the same.

When a case arises which is not specially provided for in the law, it is the practice to follow as precedent and legal doctrine in the matter the provisions of the Spanish law of patents of July 30, 1878.

COPYRIGHTS.

The law of copyrights in force in Cuba is that of January 10, 1879, extended to this island by royal order of January 14, 1879.

This has been modified by civil order 119, series 1900, whereby it is provided as follows:

"I. Authors of foreign scientific, artistic, and literary works, or their agents or representatives, shall enjoy in the island of Cuba the protection granted by the law of intellectual property of January 10, 1879, for the period during which said works are protected in the country where they originate, provided this period does not exceed the time allowed in the aforementioned law, and provided said authors comply with the requirements of the same and its regulations.

"II. This provides that the general register referred to in paragraph 33 of said law shall be kept in the Department of State and Government.

"III. Foreign works must be entered in the general register. To effect said registration, a duly legalized certificate must be presented from the proper authority of the country where the work originates, as a guaranty of proprietorship in favor of the person soliciting the registration.

"IV. Civil governors and municipal mayors shall not suspend in any case the representation, reading, or performance of literary or musical works, in accordance with the provisions of paragraph 63 of the regulations of the law of intellectual property, except in cases where the claimant proves himself to be the proprietor of the work, or his agent or representative, by producing the certificate of registration issued by the general registry and the power of attorney whenever this be necessary.

"V. No fees shall be collected for the registration of foreign works, and certificates of registration will be issued to the proprietors of such works, or their agents or representatives, free of charge."

Civil order 55, series 1901, provides that duly legalized notarial certificates of proprietary rights containing the titles to the same in full shall be considered sufficient for their inscription in the registry of foreign copyrights, provided that the public officer, in whose presence the document is executed, certifies to having had presented to him the original of the certificate of copyrights.

Civil order 160, series 1901, hereinbefore mentioned, provides for the protection of copyrights upon the filing of a certificate of registration issued by the Librarian of Congress with the governor of the island, and contained a penal clause punishing the infringement of copyrights.

Civil order 54, series 1902, provides that the general register of literary property provided for in article 33, of the law of January 10, 1879, and in article 2, of civil order 119, series 1900, shall be kept in the section of general government of the Department of State and Government, in the same manner as the register of foreign literary property.

For the purposes of article 34 of the law, it is provided that the records relating thereto and the works deposited in the printing bureau of the Department of State and Government shall be transferred to the general register of literary works.

The connection of the provincial registries with the general registry shall be the same as that existing prior to January 1, 1899, with the general registry of the Department of Development (Ministerio de Fomento) and the general directory of public instruction, and they will forward to said registry the semiannual statements of the inscriptions effected and their after history, in accordance with said paragraph 3 of the aforesaid article 34 of the law.

The three copies of each scientific, literary, or dramatic work which, in accordance with royal order of January 14, 1879, the interested parties must submit at the time of requesting inscription, and which, prior to January 1, 1899, were forwarded to the Ministerio de Fomento, of Spain, shall in the future be sent through the Civil Governor to the general registry of literary works, one of which copies shall go to the national library, one to the university, and a third shall remain in the archives of the registry.

The copy or copies in the case of musical works which must be presented shall be filed in the general registry of literary works, unless otherwise directed in the future.

Respectfully submitted, FERNANDO M. VIDAL.

Circular No. 12, Division of Customs and Insular Affairs.

WAR DEPARTMENT,
Washington, April 11, 1899.

The following is published for the information and guidance of all concerned:

In territory subject to military government by the military forces of the United States, owners of patents, including design patents, which have been issued or which may hereafter be issued, and owners of trade-marks, prints, and labels, duly registered in the United States Patent Office under the laws of the United States relating to the grant of patents and to the registration of trade-marks, prints, and labels, shall receive the protection accorded them in the United States under said laws; and an infringement of the rights secured by lawful issue of a patent or by registration of a trade-mark, print, or label shall subject the person or party guilty of such infringement to the liabilities created and imposed by the laws of the United States relating to said matters: *Provided*, That a duly certified copy of the patent or of the certificate of registration of the trade-mark, print, or label shall be filed in the office of the Governor-General of the island wherein such protection is desired; and, *Provided further*, That the rights of property in patents and trade-marks secured in the islands of Cuba, Porto Rico, the Philippines, and other ceded territory to persons under the Spanish laws shall be respected in said territory the same as if such laws were in full force and effect.

G. D. MEIKLEJOHN,
Acting Secretary of War.

PROTECTION OF PATENTS IN TERRITORY SUBJECT TO MILITARY GOVERNMENT BY UNITED STATES FORCES.

Circular No. 21, Division of Customs and Insular Affairs.

WAR DEPARTMENT,
Washington, D. C., June 1, 1899.

The following is published for the information and guidance of all concerned:

Parties who desire protection in territory under government of the military forces of the United States for patents, trade-marks, prints, or labels, as provided in circular No. 12, Division of Customs and Insular Affairs, War Department, should forward a certified copy of the patent or of the certificate of registration of the trade-mark, print, or label, together with a letter of transmittal to the Governor-General, requesting that such copy be filed in his office for reference.

Upon the receipt of such certified copy, the Governor-General will issue his formal receipt therefor and forward it to the party filing the same.

A fee of $1 will be charged for filing such copy, and should be inclosed with the letter of transmittal to the Governor-General.

The requirements for filing under the provisions of circular No. 12, above referred to, apply only to patents duly issued, and to trade-marks, prints, or labels duly registered in the United States Patent Office, under the laws of the United States. The only certification required is that issued by the Commissioner of Patents. Communications should be addressed to the Governor-General of Cuba, Habana, Cuba; or Governor-General of Porto Rico, San Juan, Porto Rico; or Governor-General of the Philippine Islands, Manila, Philippine Islands.

G. D. MEIKLEJOHN,
Assistant Secretary of War.

Circular No. 34, Division of Customs and Insular Affairs.

WAR DEPARTMENT,
Washington, September 25, 1899.

The following is published for the information and guidance of all concerned:

So much of circular No. 21, of the Division of Customs and Insular Affairs, War Department, dated June 1, 1899, as requires the payment of a fee for filing certified copies of patents or certificates of registration of trade-marks, prints, or labels, is hereby rescinded.

Said circular No. 21 is hereby further amended by the addition thereto of the following paragraphs:

A power of attorney from the owner thereof, authorizing another for him and in his name, place, and stead, to file a certified copy of a patent or a certificate of registration of a trade-mark, print, or label, must be filed with such certified copy or certificate of registration in each of the islands wherein the protection of such patents, trade-marks, prints, or labels is desired.

Assignments of patents, trade-marks, prints, or labels, or certified copies thereof, must be filed in the same manner as herein provided for filing certified copies of patents and certificates of registration of trade-marks, prints, or labels.

G. D. MEIKLEJOHN,
Assistant Secretary of War.

[No. 121.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, March 20, 1900.

The Military Governor of Cuba directs the publication of the following circular for the information and guidance of all concerned in the island of Cuba:

"*Circular No. 38, Division of Customs and Insular Affairs.*

"WAR DEPARTMENT,
"*Washington, March 9, 1900.*

"The following is published for the information and guidance of all concerned:

"So much of circular No. 34, Division of Customs and Insular Affairs, as rescinded the provisions of circular No. 21, same series, relating to fees, is hereby revoked.

"Said circulars, except so much of circular No. 34 as is hereby revoked, shall, on and after this date, be given full force and effect in Cuba, Porto Rico, and the Philippine Islands.

"G. D. MEIKLEJOHN,
"*Acting Secretary of War.*"

ADNA R. CHAFFEE,
Brigadier-General, U. S. Vols., Chief of Staff.

[Gaceta de la Habana of June 23, 1902.]

DEPARTMENT OF AGRICULTURE, COMMERCE, AND INDUSTRIES,
Habana, June 21, 1902.

The military government of the United States having ended, by virtue of which, according to the express text thereof, circulars Nos. 12 and 21, of April 11 and June 1, 1899, respectively, of the Division of Customs and Insular Affairs of the War Department, Washington, relative to the registration of American brands and patents, are without value or effect, inasmuch as said circulars were issued for the territories subject to military government by the military forces of the United States, I have resolved that patents and brands of all kinds, prints, labels, and trade-marks registered in the Patent Office of the United States, the deposit of which, for their protection in this island, is requested in the future, shall, from this day on, be registered in the Department under my charge, if same is proper, through the medium of the same procedure followed for the registration of those of other countries and payment of $35 currency for patents and $12.50 currency for brands, prints, etc., or, that is, the same fees paid for all others, domestic and foreign, instead of $1 currency, fixed by the said circular No. 21, with respect to those of the United States.

This is published in the Gaceta de la Habana for general information.

EMILIO TERRY,
Secretary of Agriculture, Commerce, and Industries.

[No. 160.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, June 13, 1901.

Under instructions from the Secretary of War, the Military Governor of Cuba directs the publication of the following order:

1. The rights of property in patents, copyrights, and trade-marks, duly acquired in Cuba, the Isle of Pines, and the island of Guam, pursuant to the provisions of Spanish law and existing in one or all of said islands on April 11, 1899, shall continue unimpaired for the period for which they were granted, and the owner or owners thereof shall be protected and their rights therein maintained: *Provided*, That the original or a duly certified copy of the patent, or of the certificate of registration of the trade-mark or copyright, is filed in the office of the governor of the island wherein such protection is desired.

The certificates of registration of trade-marks issued prior to April 11, 1899, by a Spanish provincial registry or the National Registry of Spain at Madrid, or the International Registry at the Bureau of the Union for the Protection of Industrial Property, at Berne, Switzerland, shall receive such recognition and credence as were accorded them in said islands under Spanish sovereignty; and an original certificate or duly certified copy thereof shall be received and filed in the office of the governor of the island for all purposes connected with this order without further or other certification.

2. The rights of property in patents, including design patents granted by the United States, and in trade-marks, prints, and labels duly registered in the United States Patent Office, and in copyrights duly registered in the office of the Librarian of Congress, shall be maintained and protected by the government of civil affairs in the islands above named: *Provided*, That a duly certified copy of the patent, or of the certificate of registration of the copyright, trade-mark, print, or label, is filed in the office of the governor of the island wherein such protection is desired.

3. An infringement of the rights protected by compliance with the provisions of this order shall subject the person, firm, association, or corporation guilty of such infringement to the civil and penal liabilities created and imposed by such of the laws of Spain relating to said matters as remain in force in said islands.

4. Such provisions of existing orders as are in conflict with this order are hereby revoked.

EDWARD CARPENTER,
First Lieutenant, Artillery Corps, Aid-de-Camp.

[No. 48.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, May 13, 1902.

Whereas, the seventh clause of the transitory rules contained in the constitution adopted by the constitutional convention of Cuba provides as follows:

All laws, decrees, regulations, orders, and other rulings which may be in force at the time of the promulgation of this constitution shall continue to be observed in so far as they do not conflict with the said constitution, until such time as they may be legally revoked or amended; and

Whereas, certain of the laws, decrees, regulations, orders and other rulings made and promulgated by the Military Governor of Cuba and now in force, are in terms specifically applicable and apparently limited to the military government and the officers thereof;

Now, therefore, to the end that the foregoing provision may be fully operative, and that none of the matters and things to which said laws, decrees, regulations, orders, and rulings relate shall be, or appear to be, without regulation and control after the termination of the military government and pending action thereon by the government established under the said constitution when the same shall have taken effect,

It is hereby declared and ordered that each of the said laws, decrees, regulations, orders, and other rulings made and promulgated by and under the military government of Cuba shall be deemed to be general and continuing in its character, and to be applicable to and binding upon all officers of the Government of Cuba, under whatsoever names or titles, who shall succeed the officers of the military government, and to continue in force and effect under whatsoever government shall exist in Cuba until such time as it may be legally revoked or amended pursuant to the provisions of the constitution aforesaid.

LEONARD WOOD,
Military Governor.

[No. 105.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, April 19, 1901.

The Military Governor of Cuba, upon the recommendation of the Secretary of Agriculture, Commerce, and Industries, directs the publication of the following order:

Article 10 of the royal decree of August 21, 1884, governing the concession and use of trade-marks in this island, is hereby amended to read as follows:

"ARTICLE 10. The certificate of ownership of any mark, design, or industrial pattern can only be obtained, for the purposes of this decree, by manufacturers, merchants, agriculturists, or by persons engaged in any other industry, whether they be Cubans or foreigners established in Cuba, and also by companies composed of any of such persons."

J. B. HICKEY,
Assistant Adjutant-General.

[No. 512.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, December 19, 1900.

The Military Governor of Cuba, upon the recommendation of the Secretary of Justice, directs the publication of the following order:

I. Paragraph 1, article 12, of the royal decree of August 21, 1884, is hereby amended by adding at the end thereof the following:

"Those who buy or sell receptacles stamped in a permanent manner with a trade-mark, which is registered in the name of another person, except to such person or his authorized agent, or who use such receptacles, placing therein for sale the same or similar products as those for which said receptacles are used by the owner of the trade-mark. In such cases the receptacles shall be seized, which the infringer shall forfeit to the owner of the trade-mark."

II. Article 287 of the penal code is hereby amended by adding to the end thereof the following:

"The same penalty shall be incurred by those who buy or sell receptacles stamped in a permanent manner with a trade-mark which is registered in the name of another person, or who use such receptacles, placing therein for sale the same or similar products as those for which said receptacles are used by the owner of the trade-mark. In such cases the receptacles shall be seized, which the infringer shall forfeit to the owner of the trade-mark."

III. This order shall take effect January 1, 1901.

H. L. SCOTT,
Adjutant-General.

TRANSLATION OF THE PENAL CODE IN FORCE IN CUBA AND PORTO RICO.

ARTICLE 287. The falsification of seals, marks, tickets, or countersigns which industrial or commercial establishments make use of, shall be punished with the penalties of presido correccional in its minimum and medium degrees.

[No. 18.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, January 17, 1901.

The Military Governor of Cuba, upon the recommendation of the Secretary of Agriculture, Commerce, and Industries, directs the publication of the following order:

I. Article 28, of the royal decree of August 21, 1884, referring to concession and use of trade-marks in this island, is hereby amended to read as follows:

ARTICLE 28. The petitioner shall pay for fees, on the issuance of the title of ownership, $12.50 United States currency. Said payment shall be made at the proper office of finance within a term of thirty days from the date of the notification of the concession of the trade-mark, design, or industrial model to the party concerned, under the penalty of forfeiture; presenting at the Department of Agriculture, Commerce, and Industries the documents attesting such payment, so that said Department may issue the title mentioned, which shall be entered on the register opened for this purpose at the bureau of commerce and industries of said Department.

II. A term of forty-five days from the date of publication of this order is hereby granted to those who, having obtained in Cuba concessions of trade-marks, designs, or industrial models, are not in possession of the corresponding titles of ownership, to apply for them at the Department of Agriculture, Commerce, and Industries, and pay thereon, upon delivery, the proper fees, as prescribed by regulations, under the penalty of fórfeiture. Those using trade-marks, designs, or industrial models without the corresponding title of ownership, will pay the fine in which they may have incurred, in accordance with the provisions of paragraph 1, article 39, of the royal decree of August 21, 1884.

H. L. SCOT ,
Adjutant-General.

[No. 511.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, December 18, 1900.

The Military Governor of Cuba, upon the recommendation of the Secretary of Agriculture, Commerce, and Industries, directs the publication of the following order:

I. Paragraph 2, article 36, of the royal decree of the 21st of May,* 1884, referring to concession and use of trade-marks in the island of Cuba, is hereby annulled.

II. In place and stead of said paragraph, the following is hereby declared to be in force from and after the date of the publication of this order:

Manufacturers, merchants, agriculturists, and industrials applying for registration of the same marks having distinguishing minor details, with the object of pointing out the various classes and grades of one product, or for any other motive, shall be furnished with a certificate of registration for each variation of the mark, stating their special use, and charging them the corresponding fees ($12.50 United States currency) for each certificate issued.

H. L. SCOTT,
Adjutant-General.

[No. 196.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, October 19, 1899.

The Military Governor of Cuba directs the publication of the following order:

I. The rules pertaining to the issuance of letters patent, in the island of Cuba, as promulgated by royal decree of June 30, 1833, are modified so as to substitute one sole term of seventeen years instead of the three terms contemplated by said decree.

II. The Government fees as provided in said decree are abolished, and one uniform fee of $35 is substituted therefor.

ADNA R. CHAFFEE,
Brigadier-General, Chief of Staff.

[No. 216.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, May 26, 1900.

The Military Governor of Cuba, upon the recommendation of the Secretary of Agriculture, Commerce, and Industries, directs the publication of the following order:

I. Notice is hereby given to all persons in legal possession of letters patent registered in Madrid, Spain, and extended to the island of Cuba, to exhibit the duplicates of models, plans, and specifications of their patents, or an authenticated copy of the same, together with a certificate that they are in force in Spain, in accordance with section 5 of the royal decree of May 14, 1880, within six months from the date of this order, in order to protect them from pending infringements.

II. American patents already forwarded for registration and those that may hereafter be forwarded will at once be entered in the special register in the office of the Secretary of Agriculture, Commerce, and Industries, conditionally, reserving the decision in regard to the definite inscription, or absolute rejection of such as are determined to be infringements in accordance with the proofs obtained, within the period of six months, as provided in Paragraph I of this order, upon the expiration of which period the inscription will be made in full, leaving to the parties concerned, after that date, the right of settling their differences before courts of justice.

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* May, should be August.

J. B. HICKEY,
Assistant Adjutant-General.

[No. 497.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, December 10, 1900.

The Military Governor of Cuba, upon the recommendation of the Secretary of Agriculture, Commerce, and Industries, directs the publication of the following order:

I. The requirements of order No. 216, series of 1900, from these headquarters, referring to American letters patent, are hereby extended to Cuban letters patent as well as to those granted by other nations; in consequence, letters patent forwarded for registration, which may appear as infringing on Spanish patents, shall be entered in full in the register of the Department of Agriculture, Commerce, and Industries, if, within the period of six months granted by said order No. 216, the owners thereof have not exhibited the duplicates of models, plans, and specifications of same for the necessary examination and decision in case of said infringement.

II. The inscriptions in full of Cuban and foreign letters patent shall be made in every case as directed for American patents, leaving the right to the owners of Spanish patents to settle their differences before the courts of justice.

J. B. HICKEY,
Assistant Adjutant-General.

[No. 119.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, March 19, 1900.

The Military Governor of Cuba, upon the recommendation of the Secretary of State and Government, directs the publication of the following order:

I. Authors of foreign scientific, artistic, and literary works, or their agents or representatives, shall enjoy in the island of Cuba the protection granted by the Ley de Propiedad Intelectual (Law of Intellectual Property) of January 10, 1879, for the period during which said works are protected in the country where they originate, provided this period does not exceed the time allowed in the aforementioned law and provided said authors, etc., comply with the requirements of the same and its regulations.

II. The general register to which paragraph 33 of the hereinbefore-mentioned law makes reference shall be established and kept in the Department of State and Government.

III. Foreign works must be entered in the general register. To effect said registration, a duly legalized certificate must be presented from the proper authority of the country where the work originates, as a guaranty of proprietorship in favor of the person soliciting the registration.

IV. Civil governors and municipal mayors shall not suspend, in any case, the representation, reading, or performance of literary or musical works, in accordance with the provisions of paragraph 63 of the regulations (of the Ley de Propiedad

Intelectual), except in cases where the claimant proves himself to be the proprietor of the work, or his agent or representative, by producing the certificate of registration issued by the general registry, and the power of attorney, whenever this be necessary.

V. No fees shall be collected for the registration of foreign works, and certificates of registration will be issued to the proprietors of such works, or their agents or representatives, free of charge.

ADNA R. CHAFFEE,
Brigadier-General, U. S. Vols., Chief of Staff.

[No. 55.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, February 13, 1901.

The Military Governor of Cuba, upon the recommendation of the Secretary of State and Government, directs the publication of the following order:

The duly legalized certificates of any notarial act executed in the presence of a notary public, or of any other public officer having the right to administer oaths and possessing an office of record, in which acts there shall have been inserted in full the titles or certificates of proprietary rights issued in the country in which the said acts were executed, shall be considered sufficient for their inscription in the registry of foreign copyrights: *Provided*, That the public officer in whose presence the document is executed certifies to having had presented to him the originals of the aforesaid certificates.

J. B. HICKEY,
Assistant Adjutant-General.

[No. 54.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, February 26, 1902.

The Military Governor of Cuba, upon the recommendation of the Secretary of State and Government, directs the publication of the following order:

I. Hereafter, the general register of literary works provided for by article 33 of the law and Paragraph II, civil order 119, of 1900, shall be kept in the section of General Government of the Department of State and Government, in the same form as the register of foreign literary works is now kept in the section of State of said Department, and shall also include that of foreign works, with the same books and formalities as in use at present.

II. The records relating thereto and the works deposited in the printing bureau of the Department of State and Government for the purposes of article 34 of the law shall be transferred to the general register of literary works.

III. The connection of the provincial registries with the general registry shall be the same as that existing prior to January 1, 1899, with the general registry of the Department of Development and the General Directory of Public Instruction, and they will forward to said registry the semiannual statements of the inscriptions effected and their after history, in accordance with paragraph 3 of the aforesaid article 34 of the law.

IV. The three copies of each scientific, literary, or dramatic work which, in accordance with royal order of January 14, 1879, the interested parties must submit at the time of requesting the inscription, and which, prior to January 1, 1899, were forwarded to the Department of Development of Spain, shall in the future be sent through the civil governors to the general registry of literary works, one of which shall go to the National Library, one to the University, the third remaining in the archives of the registry.

The copy, or copies, as the case may be, of musical works which must be presented, shall be filed in the general registry of literary works, unless otherwise directed in the future.

H. L. SCOTT,
Adjutant-General.

IMPORTATION OF CATTLE INTO CUBA.

Minister H. G. Squiers transmits from Habana, September 17, 1902, translation of the law in regard to the importation of cattle, as finally passed.[*] The text follows:

DEPARTMENT OF AGRICULTURE, INDUSTRIES, AND COMMERCE.

Be it known by these presents, that the Congress has voted, and I, Tomas Estrada Palma, Constitutional President of the Republic of Cuba, have sanctioned, the following law:

ARTICLE 1.

The following schedule will govern for the collection of tariff duties on cattle, horses, and sheep imported into this island through any of the ports of entry, and such others as the Executive may deem advisable to create:

Ewes	Free.
Cows (suitable for breeding) and calves	Free.
Cows, with their calves	Free.
Jersey, Guernsey, Devonshire, Durham, Hereford, Porto Rican, and Argentine Republic bulls, provided they are duly proven to be such	Free.

ARTICLE 2.

Yearlings will pay	per head	[†]$1
Florida male cattle, fat—fat being understood as exceeding 500 pounds (253 kilograms) in weight—will pay	per head	5
Honduras male cattle, fat—fat being understood as exceeding 600 pounds (276 kilograms) in weight—will pay	per head	6
Mexican male cattle, fat—fat being understood as exceeding 700 pounds (323 kilograms) in weight—will pay	per head	7
Venezuelan and Colombian male cattle, or those of other countries than those mentioned, fat—fat being understood as exceeding 800 pounds (368 kilograms) in weight—will pay	per head	8
Lean cattle—that is, such cattle as do not weigh as much as the weights specified according to the place from where they come—will pay	per head	2

ARTICLE 3.

No lean cattle will be slaughtered until at least three months after their landing. To this end, they will be branded on entering the island's ports with an iron or brand indicating the date of importation and that they are for pasture. Before any of the cattle bearing the brand referred to can be slaughtered, it must be proven, in the manner which may be established, that they have been in pasture for the period of three months referred to.

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[*] See ADVANCE SHEETS No. 1409 (August 4, 1902); CONSULAR REPORTS No. 264 (September, 1902).

[†] Paid in United States gold or its equivalent.

ARTICLE 4.

The slaugher of female cattle is prohibited, such as may be useless for breeding and properly proven to be so, excepted.

ARTICLE 5.

Stallions, whose height exceeds that established (150 centimeters, or 59 inches, measured by rule), and jackasses, whose height exceeds 130 centimeters, or 51 inches (measured in the same manner), will enter free of duty.

ARTICLE 6.

Mares suitable for breeding will pay	per head...	$3
Mares not comprised in the preceding case will pay	do......	15
Geldings whose height exceeds that referred to will pay	do......	15
Geldings of lesser height will pay	do......	2
She mules whose height exceeds that established will pay	do......	10
She mules of lesser height will pay	do......	5

ARTICLE 7.

The exportation of cattle is prohibited.

ARTICLE 8.

Neither the State, the province, nor the municipality will establish direct taxes or consumption taxes on the products of our cattle industry without establishing the same taxes, in like form and amount, on the products of the foreign-cattle industry. In whatever manner meat, national or foreign, is placed on the market, it will be considered as one single product for the purpose of levying the taxes previously cited.

ARTICLE 9.

Barbed wire and staples used in building fences are exempted from the payment of tariff duties.

ARTICLE 10.

This law will take effect ten days after its publication in the Gazette.

ARTICLE 11.

The Government will issue the orders, decrees, and regulations for the carrying out of this law.

ARTICLE 12.

Such former rulings as are contrary to the provisions of this law are revoked; therefore, I command its obedience and enforcement in its entirety.

Given at the palace of the President, in Habana, on September 15, 1902.

T. Estrada Palma.

Manuel L. Diaz,
Acting Secretary of Agriculture,
Industries, and Commerce.

IMPORTS OF CHEESE CLOTH INTO CUBA.

Minister H. G. Squiers sends from Habana, September 16, 1902, translation of an executive decree relative to the requirements to be fulfilled by importers of cheese cloth to secure the benefits of the law of July 29, 1902.* The decree reads:

> Upon the recommendation of the Secretary of Agriculture, Industries, and Commerce, and in exercise of the authority given me by article 68 of the constitution, I have deemed it well to decree the following:
>
> To punctually obey the provisions of the law enacted by the Congress and sanctioned by me on the 29th ultimo, by which the fabric known as "cheese cloth" is declared exempt from the payment of import duties at any of the custom-houses of the Republic, it will be understood that the importers of the said fabric are bound to show, within the period of sixty days and at the office of the collector at the custom-house through which the entry may have been made, that said fabric has in its entirety been used in the growing of tobacco. The presentation of a certificate, which the mayor of the municipal district in which the property is located where the said growing is done will issue gratis, will comply with this condition.
>
> If this requirement is not complied with, the importer will pay, at the respective custom-house, the duties which he did not pay on the importation of fabric, consequently collectors of customs will order that the fabric be appraised in accordance with the provisions of the regulations and tariffs, showing the corresponding weight and paragraph, and that the proper bureau record the fact that the duties on same were not paid, by virtue of this decree.
>
> If the requirement that use be proven, as by this decree provided, is not complied with, collectors can in this manner easily comply with what has last been ordered.
>
> The contract, which under this decree importers must sign before the proper customs collector, will be forwarded to the customs division of the Treasury Department, and likewise the certificate of the mayor.
>
> It is hereby ordered that the said division duly record the contracts, and that it cancel them on the receipt of the different certificates.
>
> T. Estrada Palma,
> President.
>
> Habana, *August 30, 1902.*

FRAUDULENT LAND SCHEMES IN CUBA.

Consul-General E. S. Bragg reports from Habana, under date of September 30, 1902, in regard to an enterprise said to have been organized in the United States, with the object of selling land to farmers desirous of emigrating to Cuba. The company has sent out a large number of circulars, describing the land as situated in the province of Santa Clara, on the Zapata Peninsula. Steamers are advertised as running from the small port of Batabano, in the province of Habana, to the Bay of Cochinos, in Santa Clara. Mr. Bragg explains that no such line of steamers exists, for two reasons—lack of water and lack of trade. Zapata Peninsula is largely a swamp, described in the report of the census of Cuba (1899), made by Lieutenant Colonel Sanger, as "an almost impenetrable region, 75 miles in length, with a maximum breadth of fully 30 miles" (p. 18).

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*Advance Sheets No. 1424 (August 21, 1902).

The geographical description of this swamp and its inhabitants will be found on pages 649 and 658 of the report. The following quotations are made:

> On the southern coast we find the famous swamp of Zapata, very extensive and dangerous, extending from the Bay of La Broa to Caimanera. * * * It is only possible to enter the swamp by the southern coast by two or three very shallow ports, the principal one being that of the estate of Santa Teresa, called to-day La Maquina. By the northern coast, it may be said that there exists only one entrance to the swamp in the province of Santa Clara. * * * In order to reach this pass there are only four practicable roads. * * * To go through these entrances on horseback, it is necessary to wrap the horses from their heads to their knees with pieces of hard leather, in order to prevent them injuring themselves against the points of the coral, called "dog's teeth," and so that they may endure the journey, which, by reason of the nature of the ground, is necessarily slow and arduous, as well as very unpleasant, on account of the numerous mosquitoes in the swamp. * * * For the men, it is necessary to carry provisions along, because the natives (who are the only ones who can live there) live exclusively on crocodile tails, mud turtles, agouti (Indian rats), and honey. To feed the horses, it is necessary to cut leaves from the trees.

TRADE IN NORTHERN BRAZIL.

The Acre question is the chief topic of conversation here. The Federal Government has issued an order closing the Acre and all approaches to Bolivian territory to all goods and products, unless tribute in the form of customs dues is paid to Brazil. Large quantities of American goods destined for that country are now held up en route for payment of taxes, and all rubber coming down will be charged the regular export duties.

Until this question can be settled, goods destined for Bolivia must seek a new avenue of entrance.

HARBOR IMPROVEMENTS AT MANAOS AND PARA.

Work on the new harbor improvements at Manaos has been recently begun. These include an extensive system of docks and wharves, which will facilitate the growing commerce of that city. The Booth Steamship Company has the concession, and I am informed that a large portion of the work has been sublet to a New York firm, and an engineer from that city has recently gone up the river to take charge. Work on a new electric-light plant will also be begun at once.

The harbor at Para is to be dredged to a depth which will permit the largest steamers in these waters to come up to the piers, and docks, wharves, and warehouses will be erected, extending across the entire water front of the city. Dry docks will also be erected for the repair of the largest vessels afloat. A German syndicate has secured this valuable concession, being the lowest bidder, and the managers of the syndicate, who have been in Germany financing the concession, are expected soon to begin the preliminary work on the contract, which will be completed in about five years.

DRIFT OF TRADE AND FINANCE.

Although the financial and commercial situation is still far from satisfactory here, there is now apparent a steady improvement, and business men are preparing for a more prosperous season.

Competition between the rival steamship lines has cut the cost of freight transportation 75 per cent, and merchants are hastening to take advantage of this low rate while it lasts. For instance, the former rate on a barrel of flour was $1.25; to-day, it is only 40 cents.

Trade statistics for the past eight months are inaccessible at this time, but from information gathered from various sources it is an indisputable fact that the bulk of the trade is being carried on by Americans. Our exporters are now in a fair way to secure more trade, because they are adopting effective methods, sending skillful salesmen—men who speak the language of the country and who are quick to find out what is actually wanted here.

REVIVAL OF PUBLIC WORKS.

The revival of a large number of public enterprises, which have remained in abeyance during the past two years, is another indication of the improvement in the commercial situation. The reconstruction of the local tramway system and waterworks has been resumed, and money is finding its way into circulation in this manner.

I am informed that an American company is conducting experiments on the upper river with a new wireless telegraph system. If this shall prove successful and practical, it is designed to place it in operation between Para and Manaos. No greater benefit could be conferred upon the merchants and shippers of these cities, as the present cable is rarely working more than one day in the week.

LIGHT-HOUSE ON THE AMAZON.

Mariners visiting the Amazon will be interested in the late announcement that a light-house and shelter station is to be erected at the mouth of the river, on the island of Tatuoca, a few miles below Para. It will be located in latitude 1° 11′ 45″ south and longitude

48° 30′ 10″ west. It will show a fixed white light at an altitude of 150 feet, which will be visible at a distance of 12 miles in clear weather.

GOVERNMENT WAREHOUSE FOR EXPLOSIVES.

The municipal government of Para has determined to erect a large warehouse on one of the numerous small islands opposite the city for the storage of oils and such other imflammable products as are a menace to the safety of the city.

Business houses here which handle this class of goods will be divided by law into two groups, one consisting of the wholesale firms, which are allowed to keep a certain quantity of inflammables in stock, and the other group comprising the retail firms, which will be allowed to keep a smaller proportion of these goods on hand. Importers will be allowed to sell this class of goods only to the wholesale houses.

Following is a list of the materials which are affected by the new law, the bulk of which comes from New York:

Kerosene, matches, cachaca (white rum), alcohol, turpentine, pitch, tar, rosin, waste, naphtha, acids, saltpeter, caustic soda, powder, dynamite, potash, fireworks, loaded cartridges, empty cartridges with the caps on, and caps.

The new law will take effect on September 25.

It is also reported that a railroad, about 4 miles long, will be built from Para to Pena Cova to haul these goods to the city, and Americans are already on the ground to bid for the contract.

The imports of American kerosene into this valley have increased to such proportions during the past year that, I am informed by interested parties here, it has become necessary to organize a new system to meet the demand and distribute the oil. Para, it is said, will be made the supply depot for the entire Amazon Valley.

As a result of the law mentioned, oil has advanced in price 2 milreis (50 cents)* per can of 5 gallons. But it is not believed that this advance will continue.

THE AMAZONAS LOAN FINANCED.

I am informed that the $5,000,000 loan which the State of Amazonas has been seeking to raise for the past year has been financed by Charles R. Flint, of New York City. My informant further states that as part of the consideration, the State has taken over Mr. Flint's electric-light and tramway system and his water-supply tank in Manaos at a price of 4,000 contos (about $1,000,000).*

The arrangement of this loan will enable Amazonas to carry out several important improvements in contemplation at Manaos and up-river points. The loan is guaranteed, as usual here, by the custom-house receipts.

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*Reduced to American money by Consul Kenneday.

AN AMERICAN STORE.

I give below a communication from Mr. Harry Nuding, an American who has achieved great success here in engineering work, and whose opinions are worthy of consideration:

I have had four years' experience in the north of Brazil as a constructing engineer, and I have found that it requires unusual skill and thorough knowledge to handle machinery successfully in the Tropics. German, English, French, and Belgian machinery, including locomotives, ice machines, stationary engines, electrical goods, etc., have been experimented with here and have given poor results when they have not been absolute failures. The supremacy of American machinery is thoroughly established, and if properly placed on this market an immense quantity of it can be sold to the practical exclusion of foreign machinery and machinery tools.

Ice plants.—I was sent to northern Brazil by an American machinery company in October, 1898, and since my arrival I have repaired and refitted a great deal of machinery of all kinds, built four factories, and remodeled everything in the ice plants of this region, including eight 5-ton and four 8-ton ice machines. I also introduced the first artesian wells into this country, and put up the first small ice plant for private use in South America. This is a branch of the business which will, I believe, develop into great importance in the near future, if properly managed, as a great number of these small ice plants can be sold and erected all over this country. The private ice machine above mentioned is now in operation on the island of Marajo, the great island lying in the mouth of the Amazon River. It is of about the same size as the Kingdom of Portugal and contains many large cattle ranches, and there are good prospects of doing a large business there in ice machines, artesian wells, and other necessary mechanical improvements.

On my artesian wells, I use New York machinery, and I introduced the first air compressor ever used in Brazil.

Boilers.—I also introduced American return tubular boilers, fire bricks, and fire clay, all of which gave perfect satisfaction. The old locomotive boilers here have been entirely superseded by the American return tubular boilers, as with the intense and continuous heat of this climate, added to the boiler heat (from old-style boilers), the fireman could only stand four-hour shifts; whereas to-day, with the new American boilers, they are able to run their regular day's shift. We use wood fuel owing to the excessive cost of coal, which, at the present rate of exchange, amounts to $15 to $17 per ton.

Locomotives.—Through my efforts, several American locomotives were brought down here for the State railroad, and after I made a few necessary repairs and adjustments, they ran all right, and are still giving perfect satisfaction.

Electrical machines.—Several French electrical machines were bought by the State and I was employed to mount them. They ran for a short time, but it was soon found necessary to send them to the United States to be remodeled and repaired. American electrical machines, since erected here, are found to require less fuel and attention and to give far better satisfaction in every way than the European ones.

Sawmills.—American sawmills and milling machinery are rapidly growing in favor, and there seems to be a fine field for this line of goods.

Ship machinery.—The demand for American ship machinery, tools, and marine supplies at this point is growing and can be developed into great dimensions, as this is the repair station for the Amazon Valley.

General.—There is a great future in northern Brazil for American machinery and machinery tools, and the field is almost unlimited. It needs only right business methods and thorough knowledge of the country and its needs to build up an enormous trade here in this line. I am so well convinced of this that when my present contract expires (in a few weeks), I shall immediately embark in the business of importing American machinery and tools and kindred products. I already have two important contracts for large factories, to be erected as soon as I can devote my time to it.

I have associated with me another American, Mr. E. A. Thomas, who speaks the language fluently and is familiar by long experience with the people and their customs, tastes, and needs. We shall open a large warehouse centrally located, for which I have already contracted, and handle nothing but American goods. Here, prospective purchasers and all interested in American manufactures may see samples and examine the goods at their leisure. This warehouse will serve as a supply depot for all northern Brazil. I shall receive, on consignment or otherwise, as may be agreed, all kinds of American goods, though I shall make a specialty of machinery, and it is my firm belief that in no very long time I can build up a trade in American goods in this region which will revolutionize the business of northern Brazil.

K. K. KENNEDAY,
Consul.

PARA, *September 9, 1902.*

NEW ROAD IN BAHIA.

The Bahia State government, on August 14, 1902, entered into contract with Mr. John S. Webster, an Englishman and late superintendent of the Bahia Central Railroad, for the construction of a roadway from Sitio Novo, a station on the Bahia Central Railroad, to Orobó Grande, 70 kilometers (43.4 miles) distant. The contract divides the work into two sections, the first extending from Sitio Novo to Itaberaba, 29 kilometers (18 miles), and the other from Itaberaba to Orobó Grande, 41 kilometers (25.4 miles).

This will be the first roadway constructed in this district, though the chief item of interest in connection therewith is the fact that it is primarily constructed so that the contractor may have the privilege, for twenty-five years, to convey over it passengers and cargo, either by means of cars pulled by road locomotives of the type used in the United States to pull thrashers, large plows, etc., or by some other more perfect system of mechanical traction, without utilizing rails.

The chief provisions of the contract are the following:

Four months are given for preliminary studies and drawing of plans, etc., of the work; these must be subsequently approved by the State. Twenty-two months after the acceptance of the plans, the road must be completed and open to traffic as far as Itaberaba.

In connection with the roadway proper, the contractor is to bridge the Paraguaçu River at Sitio Novo, with a metal bridge 6 meters (6.5 yards) wide and having a footpath on each side with a space in the middle for the passage of locomotives and other traffic. It is to be 170 meters (185.3 yards) long, with six spans of 20 meters (21.8 yards), and one 50 meters (54.5 yards) long, and must be complete and thrown open for traffic at least one month before the time set for completion of the roadway to Itaberaba. It is leased for five years after completion to the contractor, at 10,000 milreis ($2,000) a year, and he has the right both to use the bridge himself and collect tolls from other users.

After the section of roadway to Itaberaba has been inaugurated, fifteen months are allowed for the completion of the second section to Orobó Grande.

The material to be used in construction of the bridge and roadway, together with the curves, grades, embankments, etc., of the latter, are specified.

The State agrees to pay the contractor 350,000 milreis ($75,000) in stated installments, at designated intervals, for the construction of the roadbed and bridge of the section from Sitio Novo to Itaberaba; and for the roadbed from Itaberaba to Orobó Grande, 4,000 milreis ($800) per kilometer (0.6214 mile), this latter amount to be paid quarterly, as the work progresses.

The State reserves the right to pay either in lawful money or in bonds, running not more than six months, with interest at 8 per cent. It further agrees to petition the Federal Government for exemption from duty of all rolling stock and materials imported.

Arrangement is made for the State to reimburse the contractor for wells dug to furnish water for the engines, provided, use of the wells is granted the people adjacent thereto, and further provided, that each well does not cost more than 10,000 milreis ($2,000).

A series of penalties is arranged for failure on the part of the contractor to finish the work in the time agreed upon, and provision is made to indemnify the contractor should the State care to rescind the contract.

It is made obligatory that the contractor shall establish telegraph lines and stations along the roadway, and shall send all Government messages free of expense.

The engines and other rolling stock are to be furnished by the contractor, who obligates himself to keep the road in good condition, the State maintaining ownership of roadway and improvements thereto.

The route of the proposed road is now a trail, along which pack mules convey the products of the section to Sitio Novo, and take back such articles as are sent up from Bahia for use there. The practicability of this new method of transportation is dubious, but should it meet expectations it will be of great benefit to that section.

H. W. Furniss,
Consul.

Bahia, *September 9, 1902.*

VEHICLES IN CHILE.

The following report has been received from Consul R. E. Mansfield, of Valparaiso:

Most of the vehicles used in this country are primitive in design, and crude in construction and finish. There are no large manufactories in Chile for the production of vehicles. Two-wheeled carts are almost universally used. They are manufactured in all the towns and villages in the country. Most of them are clumsy affairs, with high wheels, heavy, rough spokes, broad, thick fellies, and wide tires. The box or frame is fastened to the axle, in most instances without springs or other means for relieving the jolting sensation produced by the wheels passing over rough country roads or uneven streets.

In the country, oxen are used almost exclusively for drawing the carts. The tongue of the vehicle is a heavy piece of timber fastened firmly in the center of the axle, and extending forward a sufficient distance for the oxen to be harnessed to it. The yoke by which the animals are attached is made from a heavy piece of timber, and is similar in form but much longer than the yoke used in the United States where bovines are employed as beasts of burden. Instead of resting upon the neck of the animal, as is the custom in most countries, the yoke is placed upon the head of the beast just back of the horns, and is fastened with strips of rawhide passed around the horns and over the forehead. This method of harnessing the animals gives them no freedom of action of the head. The box or frame of the cart being firmly fastened to the tongue, all the jarring sensation produced by the motion of the vehicle comes upon the head of the beasts, causing at times great torture.

Vehicles used for the transportation of goods in the cities and towns in Chile are of the same type as the ox carts, except that they are not so heavy. They are drawn by two or three horses. Instead of a tongue, the horse carts are provided with shafts. One horse works between the shafts, and another, attached to the cart by a single trace, works upon the left, or near side. The driver of the vehicle rides the animal upon the left, a saddle constituting a part of the harness. The driver wears a spur upon the left foot and carries a whip in his right hand.

One of the common methods of transporting cargo in the towns and cities in Chile is upon the backs of horses. Groceries, meat, milk—in fact, all classes of freight, from barrels of oil and cement to huge timbers and piles of lumber, are carried upon the backs of horses. In the country, mules are used for the same purpose, as they are more sure footed upon the hills and will carry heavier loads greater distances without unpacking than will the horses.

INDUSTRIAL MOVEMENT IN PERU.

The Department has received from Minister Irving B. Dudley, of Lima, under date of September 17, 1902, the annual report of the Peruvian Minister of Public Works. Mr. Dudley calls attention, as of special interest, to the two statements appended to this report—one showing the progressive increase in the exportation of the ten principal products of Peru during the last six years, as follows:

Article.	1896.	1897.	1898.	1899.	1900.	1901.	Increase in 1901 over 1896.
	*Met. tons.**	*Met. tons.**	*Met. tons.**	*Met. tons.**	*Met. tons.**	*Met. tons.**	*Met. tons.**
Cotton	4,718	5,586	6,712	5,876	7,246	8,011	3,293
Rice	2,804	4,222	4,276	2,873	4,260	4,164	1,360
Sugar	71,735	105,463	105,713	103,706	112,222	114,637	42,902
Cocoa	....	12	62	54	99.3	107	107
Coffee	713	1,240	1,245	1,215	1,454	946	233
Coca	....	497	490	312	566	610	106
Cocaine	....	4.2	4.35	4.5	7.75	10.6	10.7
Leather	1,332	1,710	2,127	2,062	2,286	2,251	919
Wool	2,544	3,770	3,489	3,434	3,534	3,856	1,312
Minerals	12,000	15,000	17,225	23,158	39,405	46,885	34,885

* 1 metric ton=2,204.6 pounds

The other shows the progress of Peru's international commerce during the same period:

Description.	1896.	1897.	1898.	1899.	1900.	1901.	Increase in 1901 over 1896.
Exportation	$6,113,678	$6,760,428	$7,265,945	$7,374,218	$10,795,198	$10,316,109	$4,202,431
Importation	4,201,234	3,870,874	4,611,540	4,496,486	5,561,160	6,619,737	2,418,503
Total	10,314,912	10,631,302	11,877,485	11,871,704	16,356,358	16,935,846	6,620,934

With respect to the copper industry and American participation therein, the report says:

> The copper industry, which, simultaneously with the extraordinary rise in price of that metal, acquired in a very brief space of time a notable development and made evident the magnitude of our numerous copper deposits, has undergone a certain paralysis with the fall in its price. The enterprise undertaken by the Pasco Copper Company, an American corporation, which is undoubtedly the most important mining enterprise ever set on foot in Peru, will contribute to reestablish the highest prosperity of our copper industry. The metallurgical installations and workshops which the enterprise is establishing, in harmony with the progressive methods of the United States, which seek always to widen the scope of exploitation and to replace hand work by the use of modern machinery, and have resulted in

reducing the cost of production to incredibly low figures, will teach practical lessons to our miners and enable them to find a new and wider sphere for their industry.

The Pasco Copper Company will, within a few months, begin the construction of a railroad from Oroya to Cerro de Pasco—a highway which will exercise a potent influence in the development of that mineral belt and likewise in the scarcely less important one of Huanaco.

ARGENTINE TRADE IN 1902.

I give below some figures* compiled by this legation relative to the foreign trade of the Argentine Republic during the first six months of the calendar year 1902, as compared with the same period in 1901:

Description.	January to June, 1901.		January to June, 1902.	
	Imports.	Exports.	Imports.	Exports.
Dutiable	$47,036,774	$41,598,260	$41,511,184	$46,555,213
Free	9,583,001	56,178,504	9,732,046	58,648,568
Total	56,619,775	97,776,764	51,243,230	105,203,781

According to these figures, the decrease of imports for the first six months of the present year, compared with the same period of last year, amounts to $5,376,545, and the increase of exports to $7,427,017, or a net increase in foreign trade of $2,050,472 during this period.

The following table shows the countries which participated in the imports during the two periods under comparison:

Country.	January to June.		Increase.	Decrease.
	1901.	1902.		
Germany	$8,707,668	$6,662,159		$2,045,509
West Indies	35,064	4,929		30,135
Belgium	4,238,450	3,281,177		957,273
Bolivia	54,698	62,145	$7,447	
Brazil	1,820,701	1,930,330	109,629	
Chile	60,335	86,427	26,092	
Spain	1,958,023	1,538,832		419,191
United States	6,854,849	6,297,312		557,537
France	5,276,479	4,528,086		748,393
Italy	7,734,312	6,385,522		1,348,790
Netherlands	83,911	291,129	207,218	
Paraguay	872,986	766,902		106,084
United Kingdom	18,452,332	18,809,613	357,281	
Uruguay	338,668	426,131	87,363	
Other countries	131,299	172,636	41,337	
Total	56,619,775	51,243,230	836,367	6,212,912
Net decrease				5,376,545

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* Values are in Argentine gold; $1=96.5 cents United States currency.

The classes of imports for the same periods were:

Article.	January to June.	
	1901.	1902.
Live animals	$112,232	$263,556
Food stuffs:		
Animal	923,300	630,866
Vegetable	4,174,800	4,075,305
Tobacco	1,734,852	1,445,438
Beverages:		
Wines	2,883,090	1,950,975
Spirits and liquors	596,732	578,207
Other beverages	147,381	144,643
Textiles and manufactures of:		
Silk	967,223	712,618
Woolen	4,256,529	2,910,432
Cotton	8,400,351	8,084,292
Other textile fibers	3,778,300	3,174,485
Oils	2,064,043	1,846,271
Chemicals and drugs	1,994,516	1,723,388
Dyes and colors	445,709	348,866
Lumber	2,828,060	3,217,182
Manufactured woods	688,237	638,733
Paper	1,035,394	904,762
Manufactured	445,310	462,820
Leather and manufactures of	553,667	475,673
Iron and manufactures of:		
Crude	5,054,393	4,956,226
Machinery and tools	824,942	738,757
Other manufactures of iron and steel	3,873,283	3,213,421
Other metals:		
Crude	678,265	631,995
Manufactured	1,004,309	650,668
Crockery and ceramic products:		
Raw	4,575,483	5,039,660
Manufactured	896,181	795,864
Miscellaneous	1,683,193	1,628,127
Total	56,619,775	51,243,230

The following table shows the countries participating in the exports of the Republic during the first six months of the calendar years 1901 and 1902:

Country.	January to June.		Increase.	Decrease.
	1901.	1902.		
Africa	$1,417,865	$3,722,808	$2,304,943	
Germany	14,103,983	14,681,834	577,851	
West Indies	264,725	303,310	38,585	
Belgium	8,867,651	9,082,333	214,682	
Bolivia	447,409	454,700	7,291	
Brazil	4,080,947	3,900,134		$180,813
Chile	347,041	320,563		26,478
Spain	1,034,906	785,735		249,171
United States	3,864,485	5,671,041	1,806,556	
France	16,511,941	17,297,765	785,824	
Italy	2,459,970	2,252,231		207,739
Netherlands	1,319,812	2,274,317	954,505	

Country.	January to June.		Increase.	Decrease.
	1901.	1902.		
Paraguay	$132,906	$117,148		$15,758
United Kingdom	15,473,482	19,041,487	$3,568,005	
Uruguay	2,111,313	1,418,172		693,141
Other countries	4,511,667	4,727,870	216,203	
To orders	20,826,661	19,152,333		1,674,328
Total	97,776,764	105,203,781	10,474,445	3,047,428
Net increase			7,427,017	

The classes of exports for the two periods mentioned were the following:

Article.	January to June.	
	1901.	1902.
Pastoral products:		
Live stock	$2,235,527	$2,876,427
Wool, hides, etc	44,857,400	50,425,620
Manufactured articles from animal products	2,680,275	4,562,609
Animal refuse	293,551	332,273
Agricultural products:		
Raw materials (wheat, corn, etc.)	41,936,988	40,558,704
Manufactured materials	2,371,956	2,116,302
Vegetable refuse	807,419	1,040,229
Woods and products therefrom	1,475,098	1,866,848
Minerals	213,778	148,918
Hunting products	338,629	360,039
Miscellaneous	556,143	915,812
Total	97,776,764	105,203,781

WM. P. LORD,
Minister.

BUENOS AYRES, *August 4, 1902.*

SHOE TRADE AT VERACRUZ.*

Ten years ago, it was impossible to buy anything here in the line of shoe leather, except that of native stock and manufacture, and ready-made shoes for Americans were not to be had at all. These conditions are all changed now.

United States shoes have, within a very short time, made a name for themselves, and were it not for the excessively high prices asked for them, they would surely drive all others out of the market. As it is, however, only the better classes can enjoy the luxury of our shoes, and the great mass of the people is debarred from this privilege. The prices asked for men's foot wear—say, for instance, for a shoe that can be bought at retail in the East for about $2.50 or

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*In response to inquiries by a Boston trade journal, to which advance copy has been sent.

$3 Mexican ($1.25 or $1.50 gold), costs from $4 to $6 Mexican ($2 to $3 gold) here; and how a man who earns only from $1.12 to $2.50 (56 cents to $1.25) per day is to buy shoes at these figures is a riddle still to be solved. The pay of laborers and mechanics is about the same in Mexico, dollar for dollar, as in the United States, but in the former instance it is silver, while in the latter it is gold.

The merchant has to pay gold for his stock, and has to pay freight, duties, commissions, and other expenses; and this, with the present high rate of exchange, perhaps obliges him to charge the above figures for his goods; nevertheless, it seems there is a chance for improvement in this direction. In a recent conversation, a prominent dealer assured me that he had paid for a certain class of goods, at the factory in the United States, $2.50 gold per pair, and showed me books verifying his statement; evidently, he was charged retail prices for his goods, for the same grade could have been bought at retail in the city of New York for $2.50.

In women's wear, the same conditions prevail; a shoe sold in the North at from $1.50 to $1.75 is sold here for $3, and there is nothing to be had in American goods under this price. These figures are almost prohibitive, and naturally our export trade is the loser. Notwithstanding all these drawbacks, there is a house in this city that does business to the amount of $30,000 yearly; and this is only one of several stores that handle American goods, not only for local consumption, but in supplying small country dealers near by. This amount could be vastly increased, were the prices more within the means of the people. Every effort to attain that end should be made by the manufacturer.

All styles and shapes are worn—lace, button, elastic gaiter, low-cut, tan, black, or white—the average size being No. 6 (Mexicans, as a rule, have small feet). The larger sizes—say, up to No. 9—are called for mainly by foreigners. All styles of toes will sell, but the pointed toe is still the most popular. The Latin American has a neat, slim foot, with comparatively high instep. Single soles are the rule and double soles the exception. Extension soles are not called for; in rare instances only one may see them, usually on Americans or Englishmen. The best selling shoe is of light weight, with finely stitched uppers, single sole, and flat heel, without any steel nails to clatter along the sidewalks and frequently cause a person to slip on the smooth flagging, that invariably has a pitch toward the center of the street. For the peon class, an old-style brogan would have an immense sale could it be placed within their reach.

The principal obstacle to a heavier business is the high import duty and the fluctuations in the value of silver; the duty on the cheapest shoes is the same as on the finest productions.*

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*See ADVANCE SHEETS No. 1266; CONSULAR REPORTS No. 259, for customs duties on shoes in Mexico.

What is needed at Veracruz is an American shoe house, well stocked at all times with an assortment as varied as the tastes of the people. Such a house would have all the local trade and also that of the interior towns, but it would have to be under American supervision or management.

The tendency of American exporters has been to dispose of their manufactures to the foreigner for cash f. o. b. at point of shipment. A better way is to do as other nations do, and that is to establish branch houses in foreign countries and push their goods themselves, thereby becoming more intimately acquainted with the requirements of the people and not being dependent on foreigners to open up a market for them.

The shipper must exercise the greatest care in having his goods classified according to Mexican custom-house requirements, and special attention must be given to consular invoices, as failure to do this even in trivial cases may cause the importer much trouble and annoyance, and may perhaps result in extra duties or fines. Consular invoices must be made out in strict conformity with Mexican laws. For the proper development of this territory, I can not too strongly recommend that special efforts should be made by our manufacturers to enable the native worker to wear shoes, instead of going about in sandals or barefooted.

WM. W. CANADA,
Consul.

VERACRUZ, *August 19, 1902.*

GOVERNMENT CONTROL OF RAILWAYS IN MEXICO.

The Government has purchased the major part of the recent issue of the Interoceanic Railroad Company's bonds, thus obtaining the controlling interest in the road.

The bonds were bought at 90⅛ per cent of their nominal value, and bear interest at the rate of 4½ per cent annually. Payment was made from the reserve funds of the National Treasury.

In commenting on the transaction, the public press says that the President and Secretary of the Treasury have been actuated by motives of the greatest importance to the welfare of the industries of the country, not in seeking a profitable investment for the reserve funds in the Treasury, but in trying to prevent the formation of "pools" and "trusts," with a view of controlling the import and export traffic of the Republic. The Mexican Government being in control of a railroad of the first importance, like the Interoceanic Railroad, all freight discriminations to the injury of native manufacturing and commercial interests will be prevented.

The railroads of the Peninsula of Yucatan, Mexico, with the exception of the Southern Railroad, have recently effected a combination, to be operated under one general management, and this has now been joined by the company owning the general or "fiscal" wharf in the harbor of Progreso, there being left but one wharf, owned by the "Canton Wharf Company," outside of the above combine.

At Merida, the capital of the State of Yucatan, there is an active movement on foot to organize a company for the purpose of establishing an electric-power plant to furnish motive power for the street-railway service in the city and suburbs.

J. GONZALES PAGÉS,
Vice-Consul.

VERACRUZ, *October 10, 1902.*

LABOR LAW IN NICARAGUA.

The Government of Nicaragua has just put into effect the law of June 30, 1901, regulating and defining labor in its relations with capital:

First. A laborer is defined as any person, male or female, over 16 years of age not having a capital of 500 pesos (about $100 United States currency).

Second. All laborers must have an employer. Anyone found unemployed will be imprisoned for twenty days and made to labor on public works while awaiting an employer. Every employer of labor must purchase a small booklet called "Libreta de obrero" (cost, about 20 cents), in which are registered the name, age, description, general characteristics of the person, and conditions of the contract. The employer gives his employee a receipt for the book, which the latter can produce as proof of his good standing whenever arrested by the police on suspicion of being idle. When a laborer has finished his contract with one employer and desires to go to another, he must take his "book of labor" and present it to his next employer and take a receipt, the change being registered by the judge of agriculture.

Third. If a laborer desires money in advance, his employer can give it to him only as a loan without interest, to be paid by retaining one-half of the salary or wages until the debt is canceled. A laborer leaving his employer without satisfactory settlement of his debt will be imprisoned, fined, and obliged to return and work it out.

Fourth. Any person employing laborers without this "book of labor" will be fined 200 pesos (about $40).

The purpose of the law is (1) to do away with the pernicious habit formerly in vogue of advancing wages to laborers on a contract, which made the laborer a slave until he settled his account, and (2) to prevent idleness and viciousness, by obliging everyone without capital to be employed.

The law caused general consternation at first among all classes, but as it is being enforced everyone is becoming reconciled, and the general effect seems to be beneficial.

CHESTER DONALDSON,
Consul.

MANAGUA, *August 20, 1902.*

COTTON CULTIVATION IN EGYPT.

H. T. Smith, vice-consul-general at Cairo, sends, under date of August 29, 1902, clipping from the Egyptian Gazette, which reads, in part:

Agriculture, probably the oldest and most important of human industries, from its primitive prehistoric simplicity, has attained at present the development of a practically scientific business. Guided by the observation of natural phenomena, agricultural enterprise has been crowned by the success which invariably follows study, reason, and industry.

The origin of our present varieties of cotton was accidental, but the result was none the less due to distinct natural causes. Deviations, structural or otherwise, among hybrids, more especially in plants—although we do not know why—do occur as if spontaneously; and these, no amount of vigilance, not even the most careful selection of seed, can either prevent or modify. Experience, on the other hand, often shows us how very easily hybrid plant varieties are produced both naturally and artificially. Now, should we bear this in mind, and consider at the same time their well-known tendency to instability, it is not at all to be wondered at that our cotton varieties—all hybrids, of course—under the influence, for so many years past, of unfavorable surroundings, have been continuously deteriorating. This unfavorable influence is chiefly, and quite rightly, attributed to the use of mixed seed in so many small cotton plantations spread everywhere throughout the country, by which contiguous cotton fields have suffered considerably through contamination; so much so that even the estates of the State domains and of large dairas can not be considered as altogether immune from the evil, while most of the smaller plantations present a more or less unsatisfactory commixture of varieties, which, although in most respects not quite dissimilar, are none the less objectionable because of their damaging influence and of the unevenness and inferiority of their produce. But to come back to the hybrid deviations referred to above, it should not be inferred, from what we have stated, that such deviations are always unfavorable; on the contrary, very often most desirable exceptions are met with in the fields, so much so, that we could almost venture to add that very few of our cotton plantations, even now, do not offer in themselves the element of great improvement, if not the complete regeneration of the variety; even in the more modest plantations one can detect several individual plants that present most desirable qualities. It is, of course, the business and duty of agriculturists to make the best of these favorable deviations. Before the introduction of the McCarthy cotton gins in this country, late in the fifties, the cotton wool was separated from the seeds by a small double-roller contrivance set in motion by hand and foot simultaneously; at that time, fellaheen selected pods in sufficient quantity for their sowing requirements from the best cotton plants in their fields. Large cotton-ginning mills and the rapid increase of cotton production caused considerable alterations in labor arrangements, in consequence of which the salutary practice of selecting cotton on the fields for sowing purposes was most imprudently abandoned, and a new trade, that of cotton seedsmen, was created—hence, the origin of new varieties and the deterioration of the old. Ever since, instead of only one variety, at least three were sown simultaneously, and very often three adjoining fields were to be found planted with three different varieties of cotton. It is evident that under such conditions, the difficulty of preserving pure seed for sowing purposes has been continuously increasing.

The Khedivial Agricultural Society has been endeavoring of late to protect small native farmers from the increasing unscrupulousness of seedsmen, by procuring for distribution at cost price genuine sowing seed, such as that used by the States, domains, and large land owners. Although represented as selected, it is not precisely so; and it is not reasonable to expect either any effective check to the progressive deterioration the cotton plant is undergoing, or any improvement in our varieties by its use. Selection of sowing seed, to be remuneratively serviceable, should be effected in the fields before the first and second pickings, and scrupulously confined to well-developed fruits of previously chosen plants that present most desirable qualities, such as hardiness, precocity, fertility, good staple, apparent good proportion of lint with few well-developed seeds, and, finally, good structure with their leaves, which in the Mit-Afifi variety proved immune against the attacks of the cotton worm; this selection should be performed under the personal superintendence of competent persons. We are quite sure that it will more than repay the extra expense and trouble it will entail. Moreover, it will check further deterioration, and will ultimately lead to the improvement of our present varieties.

The increasing use and demand for our best cotton, which, by the way, is rapidly gaining ground upon silk and fine linen fabrics, should be met, not only by the gradual extension of cultivated area, but also by improved new varieties, toward which the requirements of modern civilization seem to be so very favorably inclined. Thus, the inducement for the production of new varieties presents further scope for emulation; new fine varieties of cotton would be a most welcome addition to our agricultural industry, and an important factor of prosperity to our fellaheen. That there is immense margin for profitable research in several directions, viz, either that of increasing fertility, or provoking precocity, or improving quality, there can be no question; more especially for a new variety better adapted to the climatic conditions of Middle and Upper Egypt than the old Ashmouni variety. I would venture to suggest initiative experiments in the farms of the Khedivial Agricultural Society or that of the Ghizeh School of Agriculture in imitation of those made now for some time in the United States' experimental farms, where, it is stated, some apparently most desirable precocious specimens have been obtained.

EXHIBITION AT JOHANNESBURG.

Consul-General H. Clay Evans sends from London, October 3, 1902, prospectus of a proposed international peace exhibition of South Africa, to be held at Johannesburg, 1904–5. Mr. Evans adds that it is believed that the demand for machinery, tools, and other products of American manufacture in that country will be such as to command attention. The managers have established an office in London, and say that they expect to visit America very soon.

The prospectus reads, in part:

Johannesburg is the best center in the whole world for a large industrial exhibition. * * * This is undoubtedly the best opportunity ever offered manufacturers for opening up trade in new and vast territories of British South Africa. The demand for goods for many years to come will be enormous. The character of the war has necessitated devastating work on a very extensive scale by the military. Wagons, carts, building and railway material, galvanized iron, furniture, fencing wire, boots, shoes, blankets, clothing, agricultural and mining machinery, live stock, meat and food supplies are the most urgently needed commodities, but nearly every class of goods will be required in enormous quantities. The rush of capital and people will be quite unprecedented. Progress and development will be very rapid on account of the extensive mining deposits recently discovered and the vast sums of money that are to be expended. * * *

The exhibition will open at the time when the people of South Africa will most need goods and in a position where they can see with the least trouble all the most perfect appliances that science has produced for their requirements, where the Briton and the Boer can see the benefit of new inventions; then will the manufacturer introduce his goods, establish his future trade, and make his name. * * *

The arrangements of the exhibition will be organized with a view to insuring the highest degree of convenience to exhibitors and the comfort of visitors. All the latest appliances known to science to facilitate the movement of people without fatigue and hardship will be in use. * * *

An experienced staff, speaking Dutch and English, having a thorough knowledge of South Africa and its requirements, will be in attendance to render assistance to exhibitors and visitors in the explanation of exhibits. * * *

Goods of the highest class and articles of luxury should be sent; a large number of very wealthy people, well known in London society, have their homes in Johannesburg, to which they are rapidly returning and upon which large sums of money are expended. High-class furniture and works of art will sell largely, and an unceasing trade will be secured; it is therefore desirable to cultivate that trade. Do not forget that every class of society is found in South Africa.

The distance of Johannesburg from the various ports is as follows:

	Miles.
Delagoa Bay	397
Durban	483
East London	668
Port Elizabeth	715
Cape Town	1,015

Negotiations are in progress to secure very important concessions to exhibitors in freight, duty, etc.

The following list indicates the goods that will be exhibited:

Mining and mining machinery.—Drills, boring machines, mining tools, explosives, motive power, wagons, ventilation, signaling apparatus, rock breakers, concentrators, amalgamators, gold saving, cyanide, chlorination, and other processes, dredges, etc.

South African mines and their products.—Gold, silver, platinum, diamonds, assaying, prospecting.

Metallurgy, minerals, quarrying, and fuel.—Coal, kerosene, stone, iron, lead, copper ores, etc.

Ancient and modern arts.—African native work, sculpture, oil paintings, watercolor drawings, photographs, etc.

Jewelry.—Gold, silver, diamonds, and precious stones; clocks, watches, etc.

Electricity.—Generators, conductors, testing and measuring apparatus, telegraphic and telephonic apparatus, electric lighting and illuminating apparatus, distribution and utilization of power, electric signaling, electro-thermic apparatus.

Machinery, machine tools, hydraulic machines, machines for raising weights, elements of machines, and furnaces.—Machines for planing, drilling, etc.; steam and other hammers, wood-working machines, stone-working machines, washing machines, printing machinery, machinery used in the manufacture of glass and pottery, lifting apparatus, baking machinery, fire engines and fire apparatus, weighing machines, furnaces and molding machines, agricultural machinery.

Prime movers and means of distributing their power, railways, tramways.—Steam engines, gas and air engines, turbines, water wheels, means of transmitting power, rails, switches, signaling apparatus, brakes, atmospheric railways.

Construction and architecture.—House construction and building materials, water supply.

Sanitary appliances.—Sewerage, hospital, and hospital appointments.

Ironmongery.—Cutlery, surgical instruments, hardware, galvanized ironwork, fire-proof safes, kitchen utensils.

Gas and lighting (other than electricity).—Coal and other gas, tests, and photometrical apparatus, candle holders, lamps.

Military weapons, ambulance.—Ordnance, soldiers' kit and military inventions, and appliances in general.

Road and field transport carriages, bicycles, tricycles.—Bicycles and tricycles, field and road transport vehicles.

Chemistry and physics, philosophical instruments and apparatus.—Inorganic products, acids and alkalies, organic products, coal and wood, tar products, chemical apparatus, optical and thermotic instruments and apparutus, photographic apparatus.

General compounds, proprietary and general manufactured goods.—Printing and writing inks, paints, oils, varnishes, etc.; pharmaceutical products, including perfumes.

Textiles, furs, skins, clothing, and drapery.—Materials and processes for spinning, weaving, dyeing, yarns, dress goods, fabrics, etc.; hats, clothing, underwear, millinery.

Women's industry.—Needlework, embroidery, knitting, straw and basket work, ostrich feather curling and dressing, bee and silk culture, incubation, preserves, fruit, meat, vegetables, decorative work and furnishings, painting, drawing, and engraving.

Zoology and native natural history; india-rubber goods, toys; timbers and forestry; building timber and portable buildings; furniture; fermented and spirituous liquors; leather goods; sports and pastimes; food products; musical instruments; stationery; fancy goods; paper hangings and wall coverings of every description; ropes, rope making and materials; aërial navigation; agriculture and horticulture; dairy.

MACHINES FOR EXTRACTING ESSENCE FROM LEMON PEELS.*

Consul Alex. Heingartner sends the following from Catania:

The important part of this machine consists of two disks of about 4⅞ inches diameter each, the surfaces of which are indented like a nutmeg grater, so as to hold the peel in place. The disks are placed opposite each other. In the first movement, they separate about 3½ inches, and receive a half peel (previously deprived of the pulp) from a wheel, the spokes of which project about an inch above the rim, which places the peel between the disks just before they meet. The disks revolve in opposite directions and squeeze the essence from the peel without breaking it. The peel is then ejected automatically and a fresh one is inserted. The essence as it is extracted is gathered in sponges placed under the disks. The disks can hardly be seen, being hidden by two cups, which prevent the escape and evaporation of the essence.

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* Report made in reply to a Department instruction, sent at the instance of the secretary of a California chamber of commerce. ADVANCE SHEETS have been sent the inquirer.

All the work is done automatically, except placing the peels on the spokes of the wheel which supplies the disks. This work, being very simple, is done by women and boys, who receive 80 centisimi (16 cents) for ten hours' work. The capacity of the machines is 16,000 half peels per day of ten hours.

Mr. Rosario di Mauro, a large producer of essence at Giarre, has 20 machines in his factory, and is well satisfied with them.

Drawings and specifications of the different parts of the machine can not be obtained. The patentee and manufacturer is Mr. Giovanni Serravalle, of Messina, Sicily.

NAUTICAL CONGRESS IN SYROS.

At the Nautical Congress which took place at Syra,* the capital town of the island of Syros, from the 15th to the 19th of September, 1902, the following decisions were taken:

That the unenforced laws regarding the mortgaging of vessels be applied with certain modifications.

That it be enacted, that captains of steamships be trained in one special nautical school, founded in Kephallenia, from the bequests of Ballianos, and that the engineers of steamships be trained in the two iron workshops of Piræus, those of Basileiades and Macdowal, in the dock and machine shops of Syros, and in the royal arsenal. As regards the scientific training of the engineers, that evening instructions be arranged in the cities where the practical training is received.

The system of reciprocal insurance was approved of; but it was decided that an insurance establishment be founded by the intermediation of the Government, which should furnish security of 1,000,000 drachmas ($120,000), to be repaid in installments by the establishment.

That the public treasury offer awards only for transoceanic sailings. The proposition that subsidies be given for the building of ships was rejected.

Regarding the modifications of commercial law, the following important decisions were made:

That the minority of the comanagers of a vessel, representing at least one-fourth of its value, be allowed to demand the judicial sale thereof for important reasons decided by the court.

That two or three lower courts be established in the Kingdom for judging nautical differences.

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*See Advance Sheets No. 1432 (August 30, 1902); Consular Reports No. 265 (October, 1902).

That maritime assistance be legislatively regulated on the basis of the last decisions of the International Nautical Congress in Paris.

The system of free harbors was accepted as contributing to the development of shipping, and the harbor of Syros was suggested, on account of its geographical advantages and its freedom from every obligation to the international control.

LOUIS NICOLAÏDES,
Acting Consul.

ATHENS, *September 27, 1902.*

AGRICULTURAL CONGRESS IN ROME.

The seventh international congress of agriculture will be held at Rome in the spring of 1903. The committee of organization, presided over by the Marquis Raffaele Cappelli, president of the Italian Society of Agriculture, publishes the following regulations:

The congress will be divided into ten sections.

1. Rural economy, agrarian and land credit, cooperation, insurance, international commercial relations.
2. Agronomy (application of science to agriculture, amelioration of agriculture and pasturing).
3. Agricultural instruction (schools, colleges, agricultural experiment stations, etc.).
4. Economy of farm animals and related industries (bees, birds, silkworms, etc.).
5. Rural engineering (construction, hydraulics, etc.).
6. Special culture and related industries (fecula, oil, sugar, fruit, vegetables, flowers, essences, etc.).
7. Vegetable pathology, destruction of parasites, protection of useful animals (international measures).
8. Forests (preservation, replanting, etc.).
9. Water and pisiculture.
10. Wine growing and making. This special section will be considered as a continuation of the international congress of wine growers inaugurated in Paris in 1900.

The committee of organization has decided that the congress will be held after Easter—that is, in the latter half of April. The detailed and definite programme will be distributed later. All communications should be addressed to the secretary of the commission of organization at Rome, 53 via Poli, before December 15, 1902.

THORNWELL HAYNES,
Consul.

ROUEN, *September 25, 1902.*

URALITE: NEW FIREPROOF MATERIAL.

In these days when cheap and fireproof building materials are so sought, a new material is being extensively pushed, which is, I believe, worthy of the praise it is receiving. Uralite is composed of asbestus fiber, with a proper proportion of silicate and bicarbonate of soda and a small amount of chalk. It is supplied in various finishes and colors, according to its ultimate purpose. In a soft form, the sheets are like asbestus board; harder, they resemble finely sawn stone and have a metallic ring. Uralite can be supplied in a plastic form for pipe covering if required. The principal advantage of the material is undoubtedly its fire-resisting property. It is a nonconductor of heat and electricity, is practically waterproof (and may be made entirely so by paint), and is not affected by atmospheric influences, nor by the acids contained in smoke in large towns, which rapidly destroy galvanized iron.

Uralite has the further advantages that it can be cut by the usual carpenters' or woodworking tools; it can be painted, grained, polished, and glued together like wood; it can be veneered to form paneling for walls or partitions for ships' cabins or for railway carriages; it does not split when a nail is driven through it; it is not affected when exposed to moisture or great changes of temperature; and it can be given any desired color either in the process of manufacture or afterwards. It is the invention of a Russian artillery officer and chemist, named Imschenetzky.

The process of manufacture (patented) is akin to that employed in paper making, and the same class of machinery is adopted at various stages. The process commences in what is known as a "preparation building," where the crude asbestus is first of all "teased" out and freed from sand and other foreign substances. It is carefully graded and separated and passes onto edge runners, where a small portion of whiting is added to prevent grinding rather than the loosening of the fibers which is desired. From the edge runners it is conveyed by elevators to a floor above, where it is fed into a Krupp disintegrator which further loosens the fibers. It is again separated by air blasts and by sieving, and is then ready for the next stage.

In another building, the asbestus is mixed with an equal weight of whiting, if white uralite is being made; or if gray or red uralite is needed, this is replaced by carbon black or red oxide. The whiting is first reduced to a cream by beating it up with revolving paddles in a mixer. This is passed through a sieve for the removal of accidental impurities, and thence into a "hollander." The asbestus is next added, the usual charge being 5½ cwts., and then the coloring matter. The whole is worked up into an emulsion by revolving screws and beaters, for a quarter of an hour or so, and there is a further separation to remove any sand which may have hitherto escaped detection.

The uralite pulp then passes to a machine designed on much the same lines as that employed in making paper boards. The pulp is delivered over riffle boards onto an endless revolving blanket, and passing through a series of rolls is partially dried and compacted. It then passes onto a revolving drum at the end of the machine, on which some fourteen or fifteen thicknesses are deposited before the required thickness is attained, this point being signalized by a flash from a red incandescent lamp above.

During the process of winding onto the drum, a solution of sodium silicate, with an amount of sodium carbonate insufficient to permit of the immediate deposition of the silica, is passed over the successive fibers of asbestus and serves as an adhesive.

The large sheets, as they are taken from the drum in their pliable state, are quickly cut to smaller ones, measuring 6 feet 2 inches by 3 feet 1 inch. These sheets are piled up, alternating with sheets of wire gauze or sheet iron, to a height of about 40 inches. The pile is then placed under an hydraulic press and the pressure slowly increased, so that at the end of half an hour it is equivalent to about 200 pounds per square inch. This is maintained for one and one-half hours, and the pile is then left to harden for twenty-four hours, after which the sheets are removed to go to the storing rooms. Here, they are placed vertically in racks on trucks, and pass through a series of stoves with graduated temperatures. The stoves are gas fired. They are then steeped in a solution of sodium silicate, washed, left to dry, and again passed through a stove, after which they are steeped in a solution of sodium carbonate, and washed and dried as before. These subsequent operations are repeated as often as required for the final hardening of the sheets, and the entire process occupies several days. The sheets are stacked for some days and again passed through the stove, being then ready for use, though I understand that, like timber, they are the better for a little seasoning. The sheets of uralite thus produced are found to be uniform in thickness, three thirty-seconds of an inch being the standard. An expert writing on this subject says:

> Uralite, in its present form, is the result of protracted research, experiment, and tests, and I was, on the occasion of my visit to the works, enabled to witness a somewhat unique demonstration of its fire-resisting and other qualities. I understand, by the way, that tests carried out by the British fire-prevention committee

have already thoroughly established its reputation with that important organization. In the tests carried out on the day of my visit to the works, I was given a confirmation of these results. Three principal tests were made, and they fully proved that uralite possesses the following qualities: (1) The material is able to withstand intense heat for a long time without disintegration; (2) its nonconducting powers are uniform throughout; (3) it is capable of entirely preventing the passage of flame from any room where fire occurs; (4) after prolonged exposure to fire, it is able to resist water without serious damage; (5) exposure to changing atmospheric conditions does not affect it; and (6) all the materials employed in its manufacture possess substantially the same chemical, physical, and thermal constants. It is claimed that no other material fulfills all of these conditions.

In order to carry out the tests, a small brick-built house, an iron-framed hut, lined and covered with uralite, and a duplicate platform were erected. Each of these was fitted with pyrometers, recording the temperatures electrically, and was filled with highly inflammable materials. In the case of the platforms, the materials were distributed evenly under the two sections. To the test house were fixed four doors. One door was constructed with two oak boards three-fourths of an inch thick. Next to the timber was a thin steel armor plate, and over all was a covering of uralite. The second door, suitable for inside use, was built of two sheets of hard uralite running through the center of the door and forming panels. The framework consisted of timber laid on either side. A door for warehouse purposes consisted of a thickness of soft uralite in the center, and oak on either side. Next to the timber was fixed a thickness of soft uralite, and the whole was covered by a layer of hard uralite. The stiles of the other door were constructed of oak, 1½ inch thick, and the panels were filled in with uralite cement. The timber was covered all over with soft uralite, and on that a thin steel armor plate was fixed. The whole was covered by hard uralite. In each case, the materials were fixed together by means of nails and screws. A fire was lighted inside the house and the doors were shut. The highest temperature reached was 2,350° F. After the test, it was found that in each case the doors had resisted the fire. It is interesting to note, however, that in the case of the second door practically all the wood outside was burned off, leaving the outer layer of uralite uninjured by the severe heat. The fire was left to burn for over an hour. In the hut was placed a deed box made of the uralite and wood, and in the box were placed some papers, a book, a crucible containing paraffin wax, and another holding a piece of easily fusible metal. After being subjected to an external heat of 2,030° F., the papers and book were not affected in the slightest degree. It was found that the wood nearest the fire was charred right through, but the middle layer of uralite was sound and the paraffin wax had only melted slightly. The platform, 12 feet long and 6 feet wide, was built of wood, and but one-half was covered with uralite. After the fire had burned underneath it, and had reached 2,270° F., the unprotected portion was completely destroyed, but that covered with uralite was whole and strong and several of the visitors walked across it. After the fire in the small house had been going three-quarters of an hour, and when the pyrometer was registering 2,120° F., those present were able to place their hands in contact with any part of the door which was covered inside and out with uralite, though by this time the whole of the woodwork had been burned off the door which had uralite for its panels only. Temperatures were recorded at intervals throughout the tests, and detailed results, which I need not give here, can be had from the British Uralite Company on application by those interested.

In the well-equipped laboratory, I had an opportunity of witnessing some equally interesting tests. One of the staff took a strip of uralite about 1 foot in length and 1½ inches wide, of the standard thickness, and alternately stirred up a bowl of boiling water and a freezing mixture. In the latter, about an ounce of mercury was suspended in a test tube, and this rapidly froze into a bright bullet in the bottom of the tube. Some pieces of india-rubber tubing placed in the mixture were broken with the hammer like cast iron. The strip of uralite, on the other hand, showed no sign of warping, lamination, or disintegration; in fact, it would have needed an expert to have told subsequently which end of it had been subjected to such severe changes of temperature. In subsequent experiments with acids, the uralite came out equally well.

I afterwards witnessed some tests showing the crushing and breaking strain of the material. In the first, a cube 1 inch square, built up with sections, cut from standard sheets, was subjected to hydraulic pressure. A pressure of 19.8 tons was registered before they gave way. In the second test, a strip 9¼ inches long, 1½ inches broad, and seven sixty-fourths of an inch thick was placed between supports and gradually subjected to an increasing weight placed at its center. It did not break till a weight of 6.875 kilograms (just over 15 pounds) had been applied.

It will be apparent from the above that the uses to which uralite can be put commercially are many. It will probably find its widest field of service in the building trades, and it appears that it should prove equally valuable whether the buildings are of a temporary or permanent character. Owing to its extreme nonconductivity, huts, railway carriages, barracks, hospitals, etc., constructed with it, while absolutely fire and water proof, are warm in winter and cool in summer. A room covered (walls, doors, ceiling, and floor) with uralite three thirty-seconds of an inch thick might have its contents burned, it is claimed, without any danger of the fire spreading. Another great advantage is that immediately after the work is finished the room can be occupied, no time being required for drying, as in the case of plaster.

The fire-preventive qualities make the material invaluable for warehouses, particularly when these are filled with inflammable materials, since, with uralite partitions, a fire can be confined to the one compartment in which it originated. For partitions, light wooden framework only is required, with sheets of uralite fixed on both sides, or it can be affixed to match boarding.

Uralite should also prove valuable for use in ships, since, being unaffected by damp, it will not warp or crack, and, in the case of iron passenger ships (which retain for a considerable time the temperatures to which they have been subjected, with consequent discomfort to the passengers), the advantage of a lining of uralite is self-evident. An important use should be found for uralite as a lining for walls and partitions in hospitals, asylums, workhouses, etc., as it will stand fire purification, and the room can thus be very readily disinfected. The same will apply to huts or barracks in mining camps and settlements, which now have to be frequently destroyed on account of disease and vermin.

The new material is particularly suitable for brewery stores, malt bins, etc., and also for cold storage of meat and of other perishable articles. A light studding with sheets of uralite on both sides, and the intervening space filled with silicate cotton or other convenient packing material, forms a most compiete and inexpensive insulator. The material, I am informed, makes a successful joint for steam piping, and is certainly preferable to wood for boiler lagging.

Uralite is, I understand, being put upon the market at a reasonable price, when its many advantages are taken into consideration. It should be added that, the weight being only about one-fifth that of iron, it will cover a far greater area than a corresponding weight of corrugated iron.

As has been stated, the material is patented. All foreign patents, except that for Russia, are held by the British Uralite Company, of 50 Cannon street, London, E. C.

OLIVER J. D. HUGHES,
COBURG, *September 10, 1902.* *Consul-General*

QUARZITOL: NEW BRICK IN GERMANY.

Of late years, many processes or systems of making brick of sand with a slight admixture of slacked lime have been invented and put into operation. Some of these have their merits, others are entirely worthless. Within the wonderfully short time of four years, not less than eighty factories sprang into existence in Germany, engaged in manufacturing sand-lime bricks. That the patents covering such systems are not very valuable is clear from the fact that a large firm, not far from here, publishes a catalogue, offering to tell anybody and everybody just how to make sand-lime bricks and to furnish all the machinery necessary to make them. In fact, the catalogue presents gratis a number of plans and specifications for erecting and equipping factories for the purpose of making sand-lime bricks, and, as far as I can ascertain, these bricks can be safely manufactured without securing any patent rights.

As to the merits of the sand-lime brick itself, the opinions of the experts do not agree. Altogether, the brick, in the long run, does not seem to give the satisfaction it promised. To begin with, the plant necessary for its manufacture, with all its various apparatus and furnaces and hardening cylinders and the quantity of fuel required, is very expensive. And even when a fairly good sand-lime brick, as to weight and color, has been turned out, it is generally found that it is not so much of an improvement over the old-time clay brick; while the former retains most of the objectionable features of the latter, it has but few redeeming qualities of its own. Therefore, it is not surprising to learn from time to time that another brick factory, recently started, has again shut down, because it was found that the sand-lime brick can not be made as cheaply as the clay brick, and therefore can not compete with it in the open market as building material.

My attention was recently called to a new brick, which seems to be far superior to the clay or sand-lime product. It is called quarzitol, so named because it is made of flinty sand, and some chemical admixture. It is said to contain neither clay, lime, cement, nor calcined plaster—in fact, nothing but fine, clean, quartz sand and some chemical binding material. The chief qualities claimed for this new brick are: (1) It is very strong and firm, owing to its fine texture; (2) it offers great resistance; (3) it is water and fire proof; (4) it is porous, yet does not absorb much water; (5) it is not brittle, hence will not break, but can easily be chipped off with a hammer or cut with a chisel or saw; (6) the process of making it is very cheap and every piece cut or broken off can be again utilized, thus saving both time and material.

It is true that no new invention or improvement is brought upon the market without a flourish of trumpets, but the matter seemed to me to be of enough importance to justify investigation. I therefore called on the inventor, requesting that I might be shown the new stone and given information about it. I was shown a brick that had been made a day or two before in the office by one who had probably never seen one made in a brickyard. Of course, its shape was crude, as it had been put into the roughest kind of a form—very much like a cigar box. All work had been done by hand, much as a baker would knead his dough and put it into a pan. Though the brick had not been put into an oven or furnace, it had become perfectly dry and hard within that short time. A number of tests were then made in my presence. An ordinary clay brick was placed alongside of the quarzitol brick and the same quantity of water poured on each. The water on the clay brick was soon absorbed and disappeared, while half an hour later, about one-half of the liquid still stood on the quarzitol. Another test, and a very excellent one, was made in the following way: Three bricks were taken, one of clay, the other of sand lime, and the third of quarzitol. These were weighed, put in a vessel with water, and, after they had absorbed all the moisture they could, they were weighed again. This experiment was repeated four times, and it was found in the end that the clay brick had absorbed 129 grams of water, the sand-lime brick 254 grams, and the quarzitol only 80 grams, which again indicates that the quarzitol brick is an excellent material for keeping dwellngs dry, as its tendency for absorbing moisture is but slight, while at the same time it is sufficiently porous.

Again, all three bricks were placed in a drying apparatus, which was gradually heated to 200° C., when they were taken out and allowed to cool for an hour. At the end of that time, it was possible to hold the clay brick and the sand-lime brick in the bare hands, while the quarzitol brick was still so hot as to make it impossible to touch it. This test showed that the quarzitol brick is a very poor conductor of heat, and therefore must be warmer than either clay or sand lime.

To prove the fireproof quality, I was shown several bricks that had been tested some time before in a very high temperature, and I noticed that while a good part of the clay brick had melted away, the quarzitol had merely its edges rounded off.

I also saw a number of other bricks of various sizes and shapes, some of them being faced with beautiful coloring material and presenting a smooth surface, and I was told that the additional cost of this was only nominal.

Of course, all inventors are enthusiastic. The inventor of quarzitol asserts that he can use his material for all the purposes for which mortar and cement are commonly used. He claims that—

1. The quarzitol mortar is frost free down to 40° C.
2. Like the brick, it is fire and water proof.
3. It binds the brick rapidly in from three to four hours.
4. It can be used with any kind of brick.
5. It will also bind with wood and iron, and is therefore well adapted for covering girders and pillars.
6. It can be easily cleaned and polished.
7. It is much cheaper than lime or cement.

But the inventor declares that quarzitol is not only the best material for making bricks and mortar, but also that it is well adapted for the manufacture of all kinds of articles in the cement and pottery line. He claims that—

1. The artificial stone made of quarzitol equals the best kind of rock for facing masonry work.
2. It can be readily produced in any desired form or color, and also with any kind of surface.
3. The quarzitol stone is excellent for bridge building and the construction of sewers, because of its very firm and solid texture, and because it absorbs but very little water.
4. Being fireproof, it is well adapted for the construction of chimneys and fireplaces, and also for covering boilers, thus replacing the so-called fire brick.
5. Quarzitol furnishes excellent roofing material, far better than cement or tin or anything else now in use for this purpose. The entire quarzitol roof can be made, as it were, to form one piece, and is much lighter in weight than any other material.
6. Quarzitol may also be used for imitations of marble and granite for staircases, vestibules, bathrooms, window sills, covers for wash tables, etc.
7. Quarzitol floors can be made to look like linoleum or an imitation of stone or wood, and having no cracks or fissues, they are well suited to insure cleanliness and wholesome hygienic conditions in residences, hospitals, hotels, etc.

Brickmaking, however, is not in my line. I am not an expert, and can not help but remember that many things of like nature have started out well but failed when they reached the crucial test of practical adaptation. But, from what I saw, I feel satisfied that this new brick or the material it is made from is bound to have a future in the building line. It certainly does not cost much to test this newcomer, as sand is plentiful, and but little machinery is needed. At any rate, I deem it my duty to call the attention of builders, contractors, and makers of building materials to this quarzitol brick, for which letters patent have already been granted in the United States. Tests are to be made with the new brick in the Royal Technical Institute at Potsdam, and I may be able to send additional information in course of time.

HENRY W. DIEDERICH,
Consul.

BREMEN, *October 3, 1902.*

LAVA SLABS IN FRANCE.

Lava blocks of French origin, concerning which I have inquiries, come from the Department of Auvergne, a mountainous region filled with extinct volcanoes. The largest dimensions available are 2.5 meters by 1.5 meters (98.425 inches by 59.055 inches). These slabs are readily polished, and orders should be explicit upon this point. The business is carried on mainly in the city of Clermont-Ferrand, shipments being made from Riom, in the Department of Puy-de-Dôme. Prices for average dimensions f. o. b. Riom are now the following:

Slabs 1 centimeter (0.3937 inch) thick, and with a surface of 2 square meters (21.52 square feet) maximum without definitely determined dimensions, rough edges, per square meter, 14 francs ($2.70). As above, also unpolished, but with dimensions determined, 17 francs ($3.28). For slabs, with a thickness exceeding 1 centimeter, add to above prices 1 franc (19.3 cents) per each additional centimeter. For polished slabs, one face only, add to above prices 28 francs ($5.40) per square meter. All slabs exceeding 2 square meters in size command 10 per cent additional.

The term "without definitely determined dimensions" means a latitude as to length and breadth in filling the order of 20 centimeters.

The only addresses that I am now able to supply are: A. Vayron, Avenue Charras, Clermont-Ferrand, and Michel Allègre, 25 rue de la Treille, Clermont-Ferrand.

ROBERT P. SKINNER,
Consul-General.

MARSEILLES, *September 24, 1902.*

THE MARKETS OF HUNGARY.

A writer in the official commercial paper of this Kingdom points out the necessity of Hungary focusing and centralizing her markets as West European countries do. While the exporting stations are numerous, Vienna is still the market for many Hungarian products. Budapest has in its time been the market for Servian prunes, but the Servians have done everything to establish a direct export and to dispense with the Budapest market. Hungary has done something in establishing produce associations for milk, butter, eggs, fruit, vegetables, etc.; but at present there are only exporting stations, no great markets, in the country. American importers buy Hungarian beans in Vienna, Trieste, Prague, and Marseilles. It is desired here that Budapest shall have suburban markets, and that there should be special markets for particular products throughout the Kingdom. Makó, it is claimed, can supply onions; Szeged, red pepper and farina; Liptószentmiklós and Rózsahegy, sheep-milk curds; Vagujhely, gin; Ilok-in-Crotia, plum brandy; Budapest, salami, butter, champagne, and mineral waters; Debreczen, sausages, etc.

The reason that Hungary has no important markets is believed to be that social, or, as Americans term it, private enterprise, is still weak, and not only the initiative, but the permanent action in each case is expected from the State or local authorities. The pork market of Kóbanya (east side of Budapest) did come into existence through private action, but the beef market of Budapest required both State and city help to assure its beginning and maintenance. The wool markets of Losoncz and Miskolcz were privately created, but that of Budapest depended upon the favorable action of the Government.

The number of export stations in Hungary is very large, but they are known only to the Jewish commission houses in Budapest, who register at the court of commerce as commission merchants to save in taxes, but represent themselves to the outside world as exporters. As a matter of fact, they usually buy from the country producers only upon receipt of advance orders sufficient to protect themselves.

Frank Dyer Chester,
Consul.

Budapest, *September 23, 1902.*
No 267—02——6

GERMAN PROCESSES AND MACHINERY FOR BRIQUETTE MANUFACTURE.

In a recent report from this consulate,* some account was given of the use of briquettes made from brown coal, carbonized peat, coal dust, etc., as domestic and steam fuel in Berlin and other German cities, and the wholesome effect of such fuel, together with coke and fuel gas, in preserving municipalities in this country from the smoke nuisance which has become so serious an inconvenience to many industrial towns and cities in the United States. That report, having been published at a time when public attention had been especially drawn to the general subject of fuel by the prolonged miners' strike in Pennsylvania, and the consequent scarcity and increased cost of anthracite coal, has caused an unusual number of inquiries for further and more specific information concerning the extent of the briquette manufacture in Germany, the kinds of machinery employed, where and by whom manufactured, the raw materials consumed, cost of plant with a specified daily capacity, and, finally, the names and addresses of briquette manufacturers in this country who would probably answer technical questions on this subject, which might be submitted by correspondence. With a view of covering as far as practicable the general range of these inquiries, the present supplemental statement is submitted.

There were in operation in Germany at the close of 1900 eighty-nine manufactories of fuel briquettes, some of which—for example, the "Hercules," the "Seven Planets," and the "Tiefbau," at Dalhausen, on the Ruhr—produce each more than 100,000 tons annually. Briquette works are divided in respect to the material employed into two general classes, viz, those which make briquettes from brown coal (lignite) or carbonized peat, with or without the addition of a bituminous matrix or binder, and, second, those which use as a basic material coal dust or slack—the waste of soft-coal mines. Of the latter class, Messrs. Franz Haniel & Co., of Ruhrort on the Rhine, who have works at several points along the Rhine, are representatives. The great Gruhl establishment at Brühl, the "Donatus" works at Liblar, near Cologne, and the Thuringian Aktiengesellschaft, at Deuben, near Halle, are typical examples of factories which make briquettes from brown coal, which is abundant and cheap in many sections of Germany. In the last-named establishment no matrix or binder is used. The lignite is crushed, moistened with water to the consistency of mortar, then passed through the machine, which, by compression under heat, develops the bitumen in the material and renders the mass so plastic and adhesive that it molds rapidly into smooth glistening briquettes of a black or dark-brown color, which are practically smokeless and leave after combustion a reddish-brown ash. All processes of this kind are based upon the fact that lignite is a vegetable coal of more recent formation and, therefore, less perfectly carbonized structure than anthracite or bituminous coals, has lower caloric value, and requires to be compressed and further carbonized by artificial means. Turf or peat is a still more recent formation, and requires proportionately more artificial preparation to produce a high-class fuel; hence the several more or less successful patented processes for carbonizing peat into so-called peat coal, an artificial product which can be either used in irregular lumps or molded into briquettes.

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*See Advance Sheets No. 1420 (August 16, 1902); Consular Reports No. 265 (October, 1902).

From what has been previously reported on this subject, it will be apparent that in all that concerns the manufacture of briquettes from brown coal, or from the slack and waste of bituminous-coal mines, the processes employed in France and Germany have long passed the experimental stage and become a standard commercial industry. If Americans are really interested in the subject, there is no need that they should risk any large sums of money in uncertain experiments. They have only to study the machinery and methods employed in European countries, compare their crude materials with those found and used here, and they can thus start at the point of technical knowledge which Europeans have reached after many years of experience. When, some ten years ago, the attention of American iron makers was called to the German system of making blast-furnace coke in retort ovens, which saves the valuable volatile elements of the coal, it was thought worth while by certain of them to bring over two car loads of Connellsville coal to be coked as a test by the German process. The complete success of that experiment decided the introduction of the standard German type of coking oven into the United States.

Something similar, it would seem, might profitably be done with the materials which Americans have not yet succeeded in converting into satisfactory briquettes. There are experienced engineers and a dozen manufacturers of briquette-making machinery who would gladly cooperate in these tests, and would furnish machinery adapted to working the material thus technically defined. Upon a basis of such tests, plans and estimates could be obtained for the erection of plants in the United States with specified daily capacity. Among the builders of briquette-making machinery in Germany, the following may be cited as of standard reputation, the first two named being more specially concerned with apparatus for making briquettes from coal dust and slack, while the latter build machinery for briquette making from brown coal and peat: The Düsseldorfer Eisenwerke, A. G., No. 55 Bruch Strasse, Düsseldorf; Schichtemann & Kraemer, Dortmund; Tigler Maschinenbau Gesellschaft, Meiderich-on-Rhine; Röhrig & Koenig, Magdeburg-Ludenburg; Maschinenfabrik Buckau, 82 Schönebecker Strasse, Magdeburg; Zeitzer Maschinenbau Gesellschaft, Zeitz, Saxony; and E. Fietsch & Co., Thurm Strasse, Halle a. S.

Mr. Robert Grimshaw, an American engineer of large experience on the subject, whose address is at 9 Warmbücher Strasse, Hanover, may be consulted personally or by correspondence by those who may desire technical information as to machinery or methods, the cost of plants, etc.

PATENTED MACHINERY FOR MAKING PEAT BRIQUETTES.

It remains to speak of several recently invented and patented processes by which artificial coal or briquettes have been more or less successfully produced from peat by the application of machinery or methods not yet fully established on an industrial basis. Inevitably, a description of such a process must rest to a greater or less extent on the specifications and claims of its inventor, and it will be understood that in the following brief citations, no opinion or estimate is offered of the practical value of the methods described.

The Stauber process for drying moist substances was first brought into prominent notice in connection with peat-coal manufacture in 1901, when the Imperial Testing Station, at Charlottenburg, announced, as the result of experiments with peat briquettes made by the Stauber system, that they contained 45.14 per cent of fixed carbon, 4.54 per cent hydrogen, 29.34 per cent oxygen, and 9.09 per cent ash, and had a thermal value of 3,806 calories. The Stauber system as thus applied, includes a process for rapidly drying the moist peat by means of heated and compressed air within a closed chamber or channel, communicating with conduit pipes in such manner that heated air can be forced through the drying channel and cold air through the outlet pipe, the effect being that the cold air quickly absorbs the hot, saturated air out of the drying chamber and condenses it in the conduit pipes, thus greatly stimulating the process of evaporation by which the peat is dried. Peat in its raw state contains from 70 to 85 per cent of water, and, in the humid climate of northern Europe, is usually a very difficult material to dry. It is claimed for the Stauber method that it reduces the moisture to 18 or 20 per cent quickly, effectively, and, what is important, without changing the chemical composition of the peat or in any way adding to it. The drying machine is in boiler form (cylindrical), and of a size to conveniently produce 5 tons of dried peat per day. In a large plant, this unit would be simply repeated, as a number of machines can be worked with air currents generated by the same engine. A large plant for working the process is now in course of erection near Königsberg, on the Baltic Sea, and another is already in operation at Ostrach, in Wurttemberg. A sample briquette from the latter establishment, and a sample of coal made from peat prepared by the Stauber process, are transmitted as exhibits with this report.* The peat coal can be used for locomotive or other fuel raw, or it can be coked, and produces a coke wholly free from sulphur and as valuable as charcoal for certain industrial purposes.

Estimates furnished by the company give the cost of a plant capable of turning out 50 tons of peat briquettes per day, as follows:

	Marks.	
Buildings	60,000=	$14,280
Machinery	75,000=	17,850
Steam engine and fixtures	15,000=	3,570
Means of transporting material and product	15,000=	3,570
Total	165,000=	39,270

A second process is that invented by Mr. F. Schülke, of Bach Strasse, Hamburg, the salient feature of which is that the turf or peat used is cleaned of roots, stones, etc., then liquefied by water and pumped through a pipe line several miles to the works, where, as claimed by the inventor, it is leached and converted by heat and pressure into briquettes at a net cost of $2 per ton, or into artificial coal having a thermal value of 6,250 calories at a cost of $2.50 per ton. It is understood that a large plant is in process of erection on the northern coast of Germany for the utilization of this method, but as to the actual condition of the enterprise or the practical value of the process on an industrial scale, no exact information is at hand.

The Schoening-Fritz process for making artificial coal and briquettes by carbonizing dried peat is an elaboration by a German engineer of the system invented by Schoening and used with more or less success at Stamsund, in Norway. The German patent is owned by a corporation known as the Deutsche Torfkohlen Gesellschaft, which has its office in Berlin and a small plant at the suburban town of Halensee, where two machines of small capacity—one worked by hand, the other by power—have been set up for experimental purposes. A collection of samples of artificial coal made by this process is transmitted as exhibit with this report.* They are made from ordinary brown peat, of which there are thousands of square miles of deposits in the United States, and will be found coal black in color, firm in structure, glazed on the surface, clean as wood to handle, easily kindled, and practically smokeless when burned in an ordinary grate or stove. Drs. Brockhoff and Ehrecker, of Magdeburg, who as experts analyzed samples of coal made by this process, reported that it contained 68.03 per cent of fixed carbon, 4.98 per cent of hydrogen, 5.34 per cent of moisture, 19.89 per cent of oxygen, and 1.76 per cent of inorganic ash, and had a thermal value of 6,205 calories. The process consists in compressing dried peat between hot rollers, by which it is simultaneously carbonized and transformed into coal. According to the statement of the inventor, 1 ton (20 cwts.) of dried peat, costing in Germany about 1.60 marks (38 cents) will produce from 12 to 15 cwts. of peat coal. To make 1 ton of coal, the cost is 2.67 marks (63 cents) for dry peat; adding 1 mark for labor, the net cost of material and labor for producing a metric ton of peat coal would be 3.67 marks or 87½ cents. These, be it remembered, are the estimates of the owners of the process, based upon expert tests and laboratory experiments. They are given as notes of progress in the manufacture of artificial fuel in Germany, but they will have a practical interest only when the process has been successfully and continuously worked on a commercial scale.

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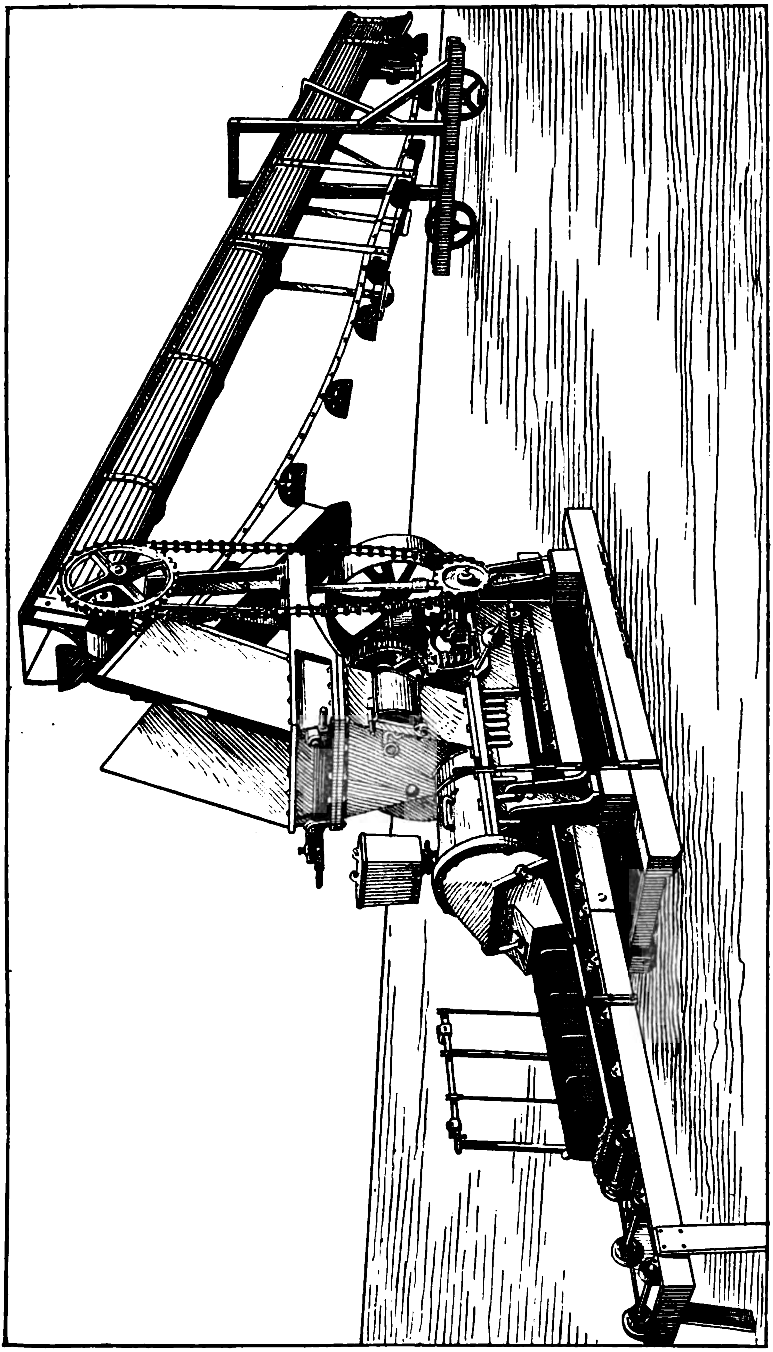
* Filed for reference in the Bureau of Foreign Commerce.

Of the processes actually employed, the value of which has been fully established by experience, one of the most interesting is that invented by Mr. C. Schlickeysen, of Rixdorf-Berlin, and practically operated there, at Munich, and other places. The peculiar feature of this system is that by it black, dense briquettes of high caloric value are made from peat without the application of heat—simply through the action of kneading and drying.

The following illustration shows a machine of this type in operation, the raw turf coming up by an endless belt or elevator running in the long sloping trough which leads to the peat bed—for these machines are portable and are generally carried on temporary railway tracks, laid so as to enable the machine to follow the point of excavation as the peat bed is gradually exhausted. From the summit of the elevator, the raw material drops into the machine, where it is cut, torn, kneaded, and compressed into about two-thirds of its original bulk, and delivered at the end of the machine in cubes of any desired size, which are first dried until they lose about two-thirds of their water, when the drying process is generally completed by artificial means. The principle upon which this machine operates depends upon the fact that peat in its natural condition contains about 80 per cent of water, of which four-fifths is held in mechanical suspension between the hairy vegetable fibers of which the peat is composed, while the remaining one-fifth is contained in the fibers



MACHINE FOR MAKING BRIQUETTES FROM PEAT.

themselves, each of which is a minute hollow tube, in which water is held by capillary attraction. In the ordinary process of drying peat, the material is cut into cubes and laid in the air, where most of the water held between the fibers soon leaches out by gravity or evaporates. That which is contained inside the fibers is much more difficult to expel, and for this purpose the fibers must be cut, torn, and compressed until they give up their liquid contents. Nine cubic feet of raw peat is thus condensed by the machine into 6 cubic feet of prepared peat, which still contains about 40 per cent of water, and this is further dried and compressed into 1 cubic foot of black, dry, fossil-vegetable stone, of about 1.5 specific gravity, which, like the samples herewith transmitted,* can be sawn, planed, and even polished like cannel coal.

Turf briquettes ordinarily contain about 66 per cent of inflammable elements, the remainder being made up of inorganic ash and water. They are thus inferior as fuel to briquettes made from brown coal, which average 70 per cent or more of inflammable matter. Both represent in their present form the utmost that science has been able to do, in utilizing inferior and otherwise almost worthless materials to supplement and eke out the insufficient coal supply of European countries.

FRANK H. MASON,
Consul-General.

BERLIN, *September 13, 1902.*

ELECTROLOGY IN GERMANY.

There are eighty electrical engineering joint-stock companies in Germany, with a total capital of $125,000,000. In 1901, these companies carried out the following orders from foreign countries:

Country.	Quantity.	Value.
	Tons.	
Belgium	629	$266,084
France	242	92,106
Great Britain	1,512	575,722
Italy	1,650	628,082
Holland	478	132,070
Austria-Hungary	1,122	427,210
Russia	2,650	1,009,120
Sweden	389	148,036
Switzerland	354	133,408
Spain	972	369,852
Total	10,068	3,831,690

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* Filed for reference in the Bureau of Foreign Commerce.

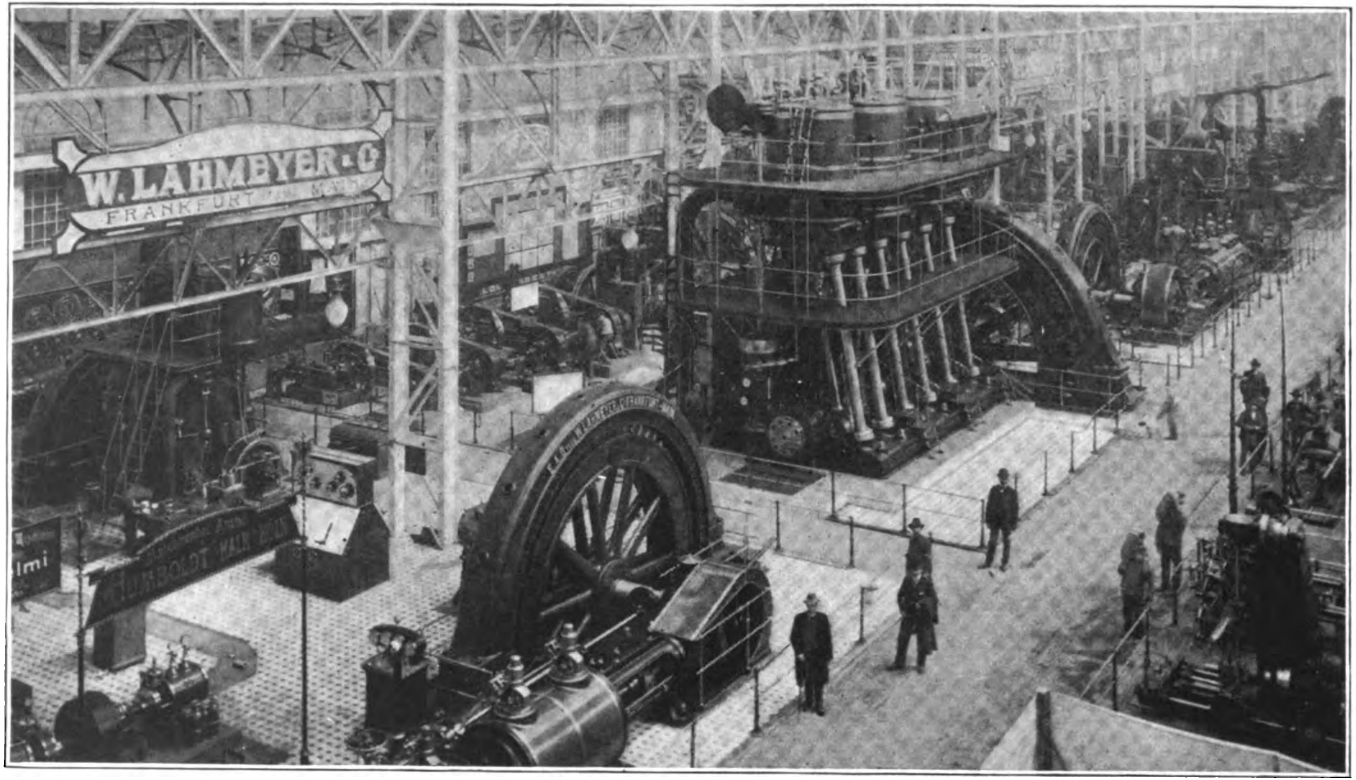

FIG. 1.—ELECTRIC PLANT AT DÜSSELDORF EXHIBITION.

The leading companies in Germany are:

Company.	Capital.	Workmen employed.
		Number.
Allgemeine Elektrizitäts Gesellschaft	$75,000,000	13,000
Siemens & Halske	35,000,000	8,000
Schuckert & Co	30,000,000	8,000
"Helios"	17,000,000	2,000
Lahmeyer & Co	(*)	(*)

* No data.

The increasing use of electricity in every direction has given a powerful impetus to electrical engineering, and this in turn has reacted favorably on all existing industries. In Germany, for example, more than half the steam engines and turbines turned out are used for driving dynamos. The steam engine has been pushed on to new lines by the requirements of electrical engineering, especially those of the alternating-current system, with regard to speed and precision of regulation. In other industrial branches, electricity has acted as a stimulus, offering new problems, in the solution of which Germany is taking a prominent part.

The Düsseldorf Exhibition, now in progress, shows some striking illustrations of the advance made in electrology in this Empire during the past ten years. The exhibits of Lahmeyer & Co., of Frankfort, whose specialty is the application of electricity to mining and metallurgy, are prominent by their number and variety. This company has set up a huge plant (fig. 1) of 13,000 horsepower, which is more than twice the power necessary to furnish the whole of the energy required at the exhibition. The great 3,000-horsepower three-phase generator, situated in the center, is coupled to a vertical triple-expansion engine. To the left of this steam generator, a single-phase alternator running at 10,000 volts has been erected. The generator furnishes the energy required for lighting the Rhine Bridge on all festive occasions, and is driven by a horizontal tandem engine.

Fig. 2 shows a complete electric pumping plant. It comprises a generating station, which in practice is installed under ground. There is a high-tension, three-phase generator, and a slow-speed pump, coupled directly to a synchronous, three-phase motor. The pump can deal with 1,210 gallons of water per minute, while the three-phase motor has a rated capacity of 650 horsepower at 2,000 volts per minute.

Germany is making great strides every year in electrical engineering. She is marching side by side with the United States in this respect, and is without question our greatest competitor, not

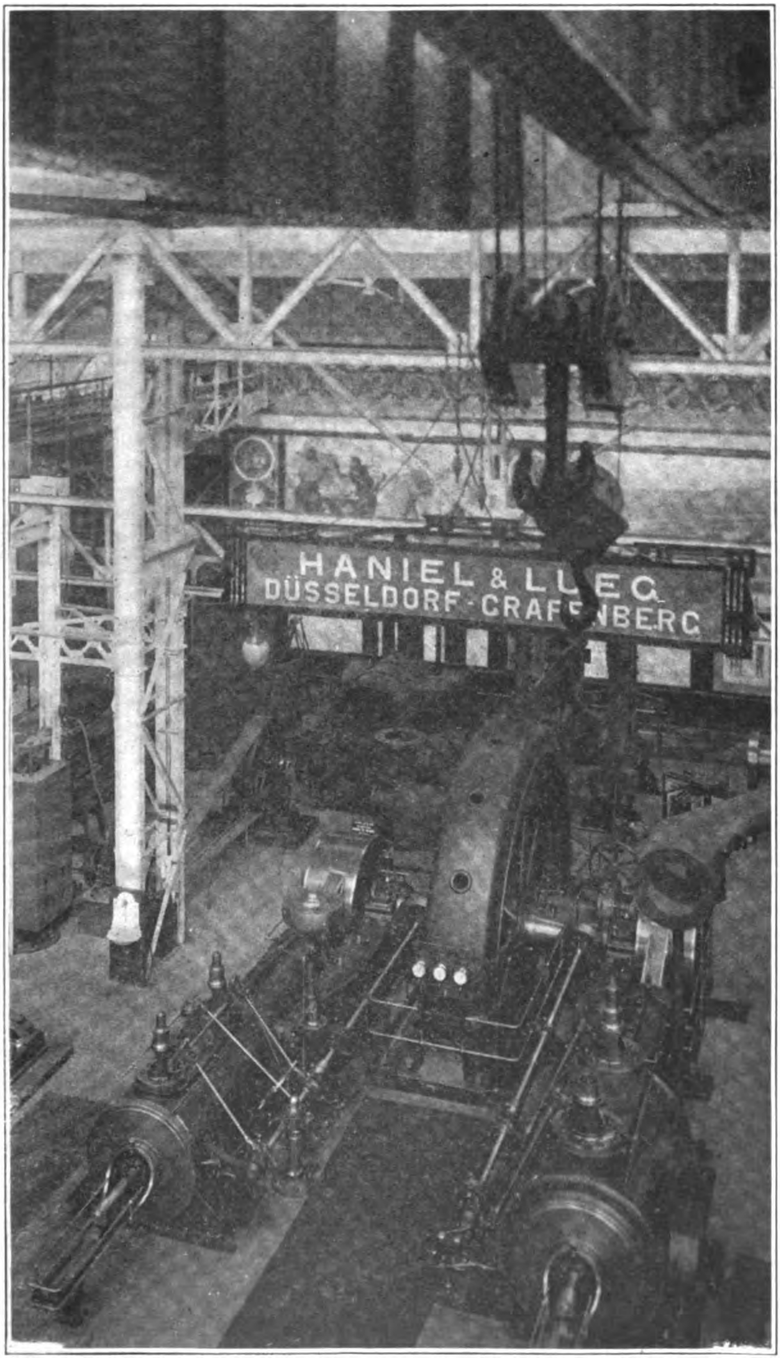

FIG. 2.—ELECTRIC PUMP.

only in supplying electrical machinery to the different nations of the world, but also in devising new inventions in both weak and strong current electrology.

If we inquire how German electrical engineering came to gain such a leading position in the world's markets, we discover that the principal cause is the profound scientific training of the German engineer. In the works of the above-named companies, there are about 1,950 engineers employed, who have received their training at the technical universities of the Empire. Of this number, 340, or 17 per cent, are directors or chief engineers; about 5 per cent are employed in the laboratories for testing machines, new apparatus and inventions, and examining material; about 3 per cent are engaged in the calculation of machinery, apparatus, resistances, and windings; fully 19 per cent are occupied with the construction of machines, apparatus, switch boards, and railway appliances; 4 per cent are employed in the actual manufacturing, as heads of the workshops, or as managers of the works; 5 per cent are managers of central light stations; and 9 per cent are superintendents of electrical installations. It is estimated that 54 per cent are engaged in computing plans and estimates for central stations, transmission of power, and railways. It should be noted that one-third of this latter number act as representatives of these companies abroad.

The preparation of the electrical engineer keeps pace with the development of the science, thereby fulfilling the conditions which enable the German electrical engineer to successfully retain the distinguished position he has reached by means of his industry, perseverance, and technical training.

ERNEST L. HARRIS,
Consular Agent.

EIBENSTOCK, *September 1, 1902.*

STREET-CLEANING APPARATUS AT DÜSSELDORF EXPOSITION.

One of the most interesting features of the Düsseldorf exposition is the department for public health, in which a new street-sweeping apparatus, manufactured by the Salus Strassenkehrmaschinen Gesellschaft, of Düsseldorf, attracts special attention. This apparatus might be termed a combination street washing and sweeping machine and a mud dredger. The cylindrical brush draws the mud to the middle, instead of throwing it off to one side, and it is carried up through an inclosed chute by an endless chain of small buckets and dropped into a cart attached to the rear of the machine. Some interesting and minute tests have been made with the Salus sweeper, and the following report, taken from a German newspaper, will be of interest to American cities interested in the matter of clean streets:

> It appears from the reports that, without throwing up the least dust, the machine cleared the road as well as if it had been done by hand; droppings, grit, stones the size of a child's fist—nay, entire bricks—were dealt with indiscriminately by the broom. In the opinion of city engineers and others, this apparatus meets every requirement of such a mechanical street sweeper. The only drawback appears to be its high initial cost—nearly 6,000 marks ($1,428)—but this would indeed be a poor objection to its introduction, if the whole sum is recovered in the course of a year, as the manufacturers claim for their machine. We understand, moreover, that this price is subject to a material reduction as soon as a demand is created, and for this, it may be hoped, we shall not have to wait too long. A German contemporary (Technisches Gemeindeblatt, Berlin) has calculated that in case of an average scavenging district, ordinarily served by two horses and a night shift of twenty scavengers, the Salus would effect an annual saving of 9,000 marks ($2,142) in wages, the staff being reduced to one-half. Against this must be set the price of the machine and the increased cost of maintenance, as compared with horse brooms. It is not likely, however, that the latter will swallow the balance of the saving, so that even in the first year after adoption a clear profit can be made, in addition to securing greatly improved sanitation.
>
> There can be little or no doubt that it is superior to the ordinary practice of sweeping by horse brooms, whether for efficiency or economy. It would indeed be a very poor contrivance if it did not surpass the commonplace machine broom, the excuse for which was its cheapness. One of the superior features of the Salus is the easily detachable dust cart, without which, of course, the apparatus would be a cumbrous device. If we are not mistaken, the ingenious sliding platform, with the attached scraper, forms another feature of novelty. Antwerp, Cologne, Essen, and several other towns in Germany are using the machine, and it was awarded the golden medal of the Prussian Ministry for Home Affairs at Berlin last year.

E. A. CREEVEY,
Consul.

GLAUCHAU, *September 5, 1902.*

COMMERCIAL EXPERTS AT GERMAN CONSULATES.

The experiment made by the German Government in establishing a corps of commercial experts, whose members are detailed for duty at consulates in countries where there seems to be reason to hope that German trade can be benefited by their investigations and reports, is apparently proving successful. These trained business men begin their work with the advantage of having at their disposal the advice of the consuls under whom they serve. The consuls, having resided perhaps for several years in the countries under investigation, have had experience, and have gathered information in regard to trade methods, etc. Unlike the consul, the commercial expert is not restricted in his movements by office duties. He accordingly has an exceptional opportunity to gather systematically and intelligently additional information needed by German exporters, with whom he may have had an opportunity for consultation before beginning his investigation. After the completion of his mission, he, in some cases, returns to Germany for the purpose of meeting in person interested exporters, and giving them, orally, information which must in this form be more satisfactory and of greater practical value than anything which he might be able to say in a printed report.

The following quotation from the report of the Chamber of Commerce at München-Gladbach, Prussia, for the year 1901, illustrates the practical value of the plan:

> Dr. Quandt, the commercial expert at the consulate-general in Constantinople, undertook during the year under report "an information journey" through the German industrial districts which are interested in export trade, visiting the city of München-Gladbach on the 6th of May. In addition to members of the chamber of commerce, representatives of other firms, whose attention had been attracted by notices published in the newspapers, attended a meeting for discussion at which Dr. Quandt was present.
>
> Dr. Quandt furnished much interesting information in regard to trade with Turkey and the reasons why it is difficult to largely increase Germany's trade relations with that country. He warned his hearers to be very cautious in selling wares on credit in Turkey, and recommended as a source of information, in addition to the consulate-general at Constantinople, a newly established commercial company in that city, known as the "Comptoir Commercial." Dr. Quandt furthermore declared himself willing to answer the inquiries of individuals to the best of his ability

GEORGE H. MURPHY,
Consular Clerk.

FRANKFORT, *September 15, 1902.*

OFFICIAL ACTION IN SUPPORT OF GERMAN EXPORT TRADE.

The appended translation from the report of the Chamber of Commerce at München-Gladbach, Prussia, for the year 1901, shows that Germany's diplomatic officers, as well as its consuls and commercial attachés, are taking a deep and intelligent interest in the extension of their country's export trade. The plan adopted by the German Minister at Tangier is simple and most effective, owing to the fact that Germany's representatives abroad, its Ministry of Commerce, and its individual boards of trade work hand in hand for the accomplishment of an object which is always kept distinctly in view. The plan adopted by the minister at Tangier and the way in which the information supplied by him is utilized are both common-sense methods of instructing and assisting exporters. The report of the

München-Gladbach Chamber of Commerce on the subject is as follows:

> This chamber was informed by the Minister of Commerce on July 2, 1901, that the imperial legation in Morocco had caused the principal German firms in Tangier to prepare a collection of samples for the information of interested German manufacturers. The Moorish demand for cotton wares had previously been supplied almost exclusively by England. As the sale of foreign cotton wares in Morocco is not unimportant—the importations at eight Moorish ports in 1899 amounted, in round numbers, to 11,625,000 marks ($2,766,000)—it appeared to the minister that it might be worth while for German manufacturers to try to compete with their English rivals in the Moorish market.
>
> This collection of samples, accompanied by an explanatory report, was forwarded to the München-Gladbach Chamber of Commerce for inspection by interested manufacturers, with instructions that within three weeks after receipt, it must be sent on to the Chamber of Commerce at Muenster.
>
> Public notice was given in the newspapers that for a period of two weeks, beginning July 18, this collection of samples could be examined in the office of the Chamber of Commerce by interested persons residing within our district.
>
> The result was that a large number of representatives of different branches of the textile industry had an opportunity to carefully inspect the samples. A report on the subject was sent to the Minister of Commerce on August 6, 1901.

GEORGE H. MURPHY,
Consular Clerk.

FRANKFORT, *September 16, 1902.*

GERMAN LAW AGAINST UNFAIR COMPETITION.

The term "unfair competition" is held in Germany to cover all methods that tend to injure a competitor, either indirectly, by concealing the quality of goods, unlawful use of trade-marks, etc., or directly, as in the disparagement of his business or wares, concealing the name of a firm, changing goods from one business place to another, and betraying business and factory secrets.

Many countries have laws against such practices. According to the French method of procedure, unfair competition is regarded merely as a cause for instituting and bringing a civil action against the offender, and is divided into different groups, according to the methods employed. Only in a few cases is a criminal procedure made possible by special law. The protection afforded trade in Belgium, Great Britain, Italy, and the United States is about the same as in France.

Germany has gone further than any of the other countries, and is fighting the evil, not with civil, but with criminal law. This law went into force July 1, 1896, and has a certain connection with the law of May 12, 1894, regarding trade-marks.

The principal misdemeanors considered in this law are:

1. Fraudulent advertising, *i. e.*, false declarations concerning methods of production, make-up or prices of wares; source of supply; reason for selling; possession or ownership of trade-marks. In the above cases, every business man or group of business men has the right to bring suit against the offending party, calling for the suppression of the above practices, also for damages. A fine not exceeding 1,500 marks ($357) can be imposed; repetition of such an offense is punishable with imprisonment not exceeding six months.
2. Detraction of a competitor, *i. e.*, spreading false reports concerning the trade of another, his person, the manager of his business, or his wares. Offenses of this nature are punishable with a fine not exceeding 1,500 marks ($357), or imprisonment not exceeding one year.
3. Misusing another's name in such a way that an unfair advantage is gained. Offending parties must pay damages and are compelled to discontinue such practices.
4. Disclosing business secrets during time of employment. A fine not exceeding 3,000 marks ($714), or imprisonment not exceeding one year can be imposed, and in addition, judgment of damages sustained. Any competitor using information gained in this way, as well as any third person disclosing such information to him, is liable to a similar punishment.
5. Deception as to the quality of goods. The Federal Diet has been empowered to prescribe that certain articles are to be sold at retail only in certain quantities, lengths, according to certain numbers, etc., or with declarations as to number, weight, etc. The punishment for every infringement shall not exceed 150 marks ($35.70).

As regards the effect of the law briefly described above, the Berlin Society of Business Men and Manufacturers says that up to the present time it has been very beneficial. This effect is ascribed to the strictness with which the law is enforced. The knowledge that taking an unfair advantage of a competitor is not merely a breach of good faith, but is also punishable by fine or imprisonment, acts as a deterrent.

BRAINARD H. WARNER, Jr.,
LEIPZIG, *September 8, 1902.* *Consul.*

GERMAN TRADE UNDER COMMERCIAL TREATIES.

Germany has now enjoyed trade relations for a period of ten years under commercial treaties with seven different countries, viz: Austria-Hungary, Belgium, Italy, Servia, Switzerland, Roumania, and Russia. A careful study of the statistics, parts of which have been issued recently, and a proper comparison of the trade of Germany before these treaties were in force and afterwards, reveals information which may at this time be of interest.

The following table shows the changes in trade:

Description.	1889-1891.		1899-1901.		Increase.
	Marks.		*Marks.*		*Per cent.*
Exports	3,222,000,000	$766,836,000	4,417,000,000	$1,051,246,000	37
Imports	4,650,000,000	1,106,700,000	5,557,000,000	1,322,566,000	19
Treaty countries.					
Exports	957,000,000	227,766,000	1,376,600,000	227,488,000	44
Imports	1,839,000,000	437,682,000	1,970,000,000	468,860,000	7
Total exports	3,222,000,000	766,836,000			
Total imports	4,650,000,000	1,106,700,000			
Excess of imports	428,000,000	101,864,000			14
Total exports			4,417,000,000	1,051,246,000	
Total imports			5,557,000,000	1,322,566,000	
Excess of imports			1,140,000,000	271,320,000	24
Treaty countries.					
Exports	957,000,000	227,766,000			
Imports	1,839,000,000	437,682,000			
Excess of imports	882,000,000	209,916,000			92
Exports			1,376,000,000	327,488,000	
Imports			1,970,000,000	468,860,000	
Excess of imports			594,000,000	141,372,000	43

The excess of total imports over exports in 1889–1891 was 428,000,000 marks ($101,864,000), and in 1899–1901, 1,140,000,000 marks ($271,320,000), an increase of 170 per cent.

The excess of the total treaty imports over exports in 1889–1891 was 882,000,000 marks ($209,916,000), and in 1899–1901, 594,000,000 marks ($141,372,000), a decrease of 33.3 per cent.

It will be seen by the above summary statement that Germany, by entering into commercial treaties with these seven different countries, was able to increase her export trade with them, for the periods above mentioned, 44 per cent; and while at the same time the imports from these countries exceeded the exports to them, this excess was 33 per cent less in the last three years of treaties than in the three years before the treaties came into operation. This greatly increased volume of trade has made reciprocity treaties popular in Germany.

EDWARD H. OZMUN,
Consul.

STUTTGART, *September 22, 1902.*
No 267—02——7

GERMAN TARIFF ON MACHINERY.

The present German tariff rates on foreign-made machinery are easy to calculate. Locomotives and portable machines pay a duty at the rate of 8 marks ($1.90) per metric centner (220.46 pounds); the duty payable on other machines depends upon the material which predominates; if chiefly of wood, 3 marks (71 cents) per metric centner; of cast iron, 3 marks (71 cents) per metric centner; of malleable iron, 5 marks ($1.19) per metric centner; of other metal, 8 marks ($1.90) per metric centner. These are now to be superseded by a complicated arrangement of various "progressive rates," dependent upon weight. Thus, we find that locomotives weighing up to 10 tons are to pay 11 marks ($2.62) per metric centner; those weighing over 10 tons, 9 marks ($2.14); locomotive tenders, 5 marks ($1.19); engines, motors, from 3 marks 50 pfennigs up to 100 marks (83 cents to $23.80) per metric centner; sewing and knitting machines without frames, 35 marks ($8.33); with frames, 20 marks ($4.76); curtain, lace, and tulle machines, 10 marks ($2.38); machines for working metals, wood, and stones, 4 to 20 marks (95 cents to $4.76); steam mowing and thrashing machines, 9 marks ($2.14); spinning and weaving machines, 6 marks ($1.43); other machines according to weight, from 3.50 to 18 marks (83 cents to $4.28); electro-technical products, 6 to 60 marks ($1.43 to $14.28); incandescent lamps, 120 marks ($28.56); vehicles for rails, 5 to 12 marks ($1.19 to $2.86); other vehicles, 20 to 150 marks ($4.76 to $35.70); and bicycles, 150 marks ($35.70) per metric centner. It can easily be seen how hard it will be to have these rates applied uniformly, in view of the latitude allowed to the appraising officials.

OLIVER J. D. HUGHES,
COBURG, *September 27, 1902.* *Consul-General.*

INDUSTRIAL CONDITIONS IN LIEGE, BELGIUM.

The industrial outlook here has greatly improved in the past few months, and the backbone of the hard times for this part of Europe seems to be broken. The United States has done much to stimulate industries. Three steel plants here are working on a 50,000-ton order of steel rails for Mexico, and a contract has just been closed for 27,000 tons for a road in Maryland; many smaller orders for structural steel and rails have also been received.

During the past quarter, there was shipped through this consulate $22,874.56 worth of structural steel and $77,367.56 worth of steel rails and accessories. There was also a decided increase in the value of glassware shipped, amounting to $57,171.74 for the quarter. A party from the United States is in the market for 50,000 tons of steel rails, and I am informed it is practically settled that the mills here will get it. Liege is coming to be known as one of the principal steel manufacturing centers of Europe.

The large increase of business between this consular district and the United States is not all on one side. There is more inquiry for American goods than ever before, and the people seem to be in earnest. The greatest demand is for farm and industrial machinery, electrical supplies, and canned and dried fruits. The openings for these lines are good, but the merchants here want to open direct connections with the manufacturer and producer.

ALFRED A. WINSLOW,
LIEGE, *October 7, 1902.* *Consul.*

AMERICAN COAL AND FRENCH GYPSUM.

One of the prominent Rouen shipping and forwarding firms informs me that it would be glad to learn if there is any demand in America for the finest grade of gypsum known, delivered f. o. b. Rouen at 8 francs ($1.544), or f. o. b. Havre at 11 francs ($2.123) per ton.

One of the greatest hindrances to the introduction of American coal into northern France is the want of a return cargo. If there is any demand for gypsum at the low prices mentioned, it might be advantageous for parties interested to communicate with this firm, which owns extensive gypsum deposits between this port and Paris, and with its own vessels, engines, cranes, etc., possesses unequaled facilities for taking in hand, discharging, reshipping, and carrying foreign coal or any other importation from Havre or Rouen to Paris or other destinations.

I am told that the Paris gas company, the largest in the world, uses annually 1,200,000 tons of coal, of which 200,000 tons have been coming from England—80,000 by way of Rouen. . In face of the unceasing miners' disturbances in France, which at present are more threatening than ever, a greater quantity must necessarily come from abroad.

The address of the firm mentioned above is Fretigny Fils, 13 rue Centrate, Rouen; or communications to this consulate will be promptly delivered.

THORNWELL HAYNES,
ROUEN, *September 27, 1902.* *Consul.*

NEW FRENCH ENTERPRISES.

CABLES.

The Journal de Rouen of September 13, 1902, says:

> M. Georges Trouillot, Minister of Commerce, Industry, Posts, and Telegraphs, has decided to open to public bids the contract for the furnishing and placing of the undermarine cables: (1) From Brest to Dakar; (2) from Tamatave to Reunion and from Reunion to Mauritius; (3) from Saigon to Pontianak (Borneo).

It may be well to recall that these cables belong to a programme made some years ago, a part of which has already been carried out, namely, the laying of the cable from Tourane to Amoy, in the extreme Orient, and from Oran to Tanger, both of which have been working since June, 1901. The lines from Dakar to Konakry, from Grand Bassam to Kotonou, and from Kotonou to Libreville, have been bought. To connect the metropolis with the French occidental African lines, the French Government had thought to prolong the cable from Tangier to Teneriffe and thence to St. Louis; but this combination having the inconvenience of passing through a foreign country, it has been deemed better to lay this cable direct, which will undoubtedly offer advantages of security and rapidity, and further facilitate relations with South America, which is connected with St. Louis, via Senegal, by the line from Pernambuco.

It has also been thought best to substitute for the Oran-Teneriffe-St. Louis project the line from Brest, the first French port of war, to Dakar, the point of support of the French fleet. The contract for this line is put for October 21 next, but this can only become definite after a law is passed supplying the necessary credits. After this, it is thought the line should be in working order within eleven months.

The cable from Tamatave to Reunion and to Mauritius is intended to increase French communications with Madagascar and the French colony of Reunion; and the line from Saigon to Pontianak is to augment the interests between French Indo China and the islands of Borneo and Java. These cables are placed for contract at the same time as the line from Dakar to Brest, but are expected to be in working order in less than eleven months.

The commission charged to determine on the bids submitted is presided over by M. Bérard, under secretary of state for posts and telegraphs.

RAILWAY.

A decree of the Government, dated June 17, authorized the Department of the Seine-Inférieure to borrow the sum of 3,063,425 francs ($591,241), payable in forty-eight years, for the purpose of building a railroad from Aumale to Envermen. Both places are situated in this Department, the Seine-Inférieure. The general council of the Seine-Inférieure, at its meeting a few days ago, decided to borrow this money from the Mutual Life Insurance Company, which submitted the best offer.

The first work in constructing this railway will begin at Aumale. The line, being a local one, will be built under the direction of the departmental commission, which has been delegated by the general council to arrange the contract for the loan and invite bids for the rails and other furnishings. The préfect de la Seine-Inférieure, rue de Fontenelle, Rouen, is at the head of the departmental commission.

THORNWELL HAYNES,
ROUEN, *September 13, 1902.* *Consul.*

AGRICULTURAL IMPLEMENTS IN FRANCE.

No class of American manufactures finds readier sale in France than our agricultural implements, and so numerous are the marks and varieties exploited that the layman, seeking to be useful, runs the risk of holding up to his countrymen as something out of the ordinary, devices of purely American origin which have found their way into French catalogues with the source of supply left out. I am none the less convinced, however, that our manufacturers as a body have left the field to a mere handful of their number, and that this handful, by generally omitting to establish their own agencies for the sale and distribution of their goods, are neither selling as much as they might, nor acquiring the identity among the consumers that they should. Of course, it is much easier and requires less capital at the outset for a dozen manufacturers of different machines to give over their agencies to one foreign concern, which will substitute its own name for that of the makers of the machines, than for these same houses to set up for themselves; but are the results the same? A comparison between the successes achieved by the American firms that have courageously started out in their own way, and those that have adopted the more common method, is certainly favorable to the former.

One great objection to the habit of trusting to existing agencies for the sale of implements is that it tends to prevent our manufacturers from having a clear comprehension of the limitations and distinctive features of continental methods; they content themselves with offering their standard types, when, if they were in direct contact with the farming community, their quick genius would enable them to adapt now unsalable articles to peculiar conditions abroad, and to control an undeveloped trade.

I have recently been particularly struck by the absence of the familiar red thrashing machine in the southern part of France, after an abundant harvest. During a visit of several weeks in the Alpine region, I saw but one large thrasher; it was a French one, hauled about by slow-going oxen. The tariff, by the way, was 10 cents per 220 pounds of wheat; and yet in this same region progress had been made, for when I had visited it four years ago, the grain was invariably separated by a huge stone roller drawn by oxen moving about in a circle over a hard-clay floor, whereas now the work is done by small one-cylinder machines about 4 feet high. Many still cling to the old-fashioned stone roller. When one stops to consider that all France is cut up into 50-acre farms, that wheat is grown on mountain sides so steep that it must often be cut by a sickle, and some similar circumstances, it is not hard to comprehend why the American traction engine, with its red thrasher and crew of operatives, is practically unknown in this country, and why its sale will be uncertain for a long time to come. The little unpainted pine affair, on the other hand, commands a ready sale; and if our manufacturers could improve upon it, as they certainly could, supplying a machine low in price and easily transportable over steep mountain

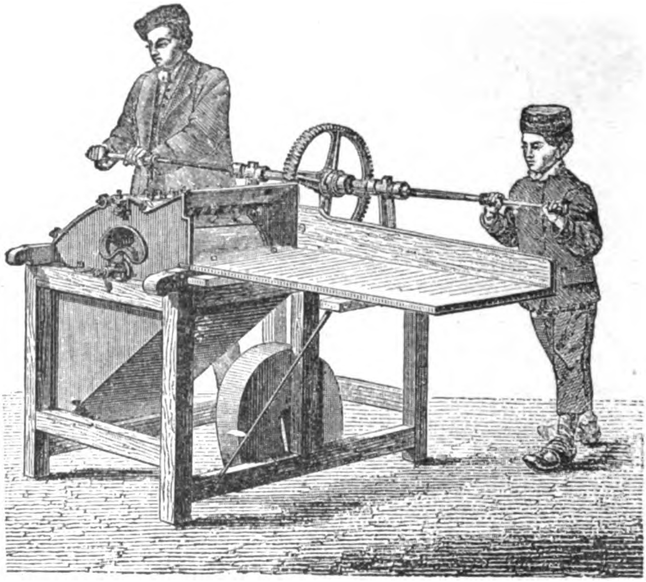

FIG. 1.—THRASHER.

roads, they could participate in the business. If the farmer's family is numerous, these machines are operated by hand. I have often seen them with three persons at the crank, one man feeding and two removing the straw. Quite as often, oxen or horses furnish the power, which is transmitted by a long iron rod. The grain as it leaves the machine requires winnowing in another device. Figures 1 and 2 represent a thrasher and a horsepower manufactured by Plissonier, 234 Cours Lafayette, Lyons. The price of the hand-power thrasher is $21.30; with attachment for connecting with a horsepower, $35.70; with attachment for connecting with an engine, $46.32. The manufacturer says of these machines that by transmitting the power by means of an endless screw and by suppressing the

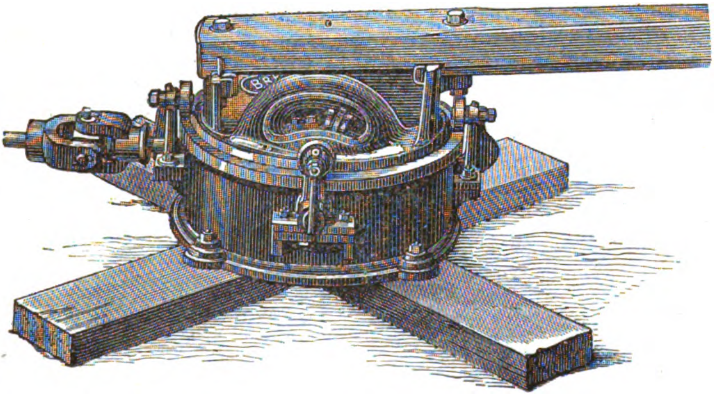

FIG. 2.—HORSEPOWER.

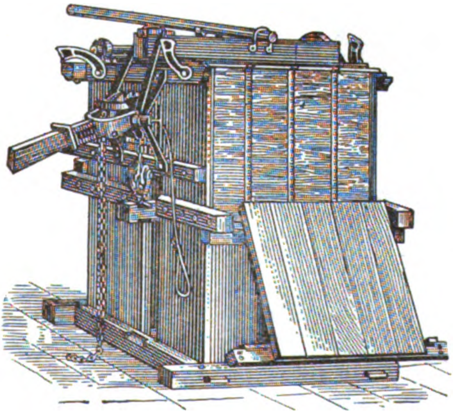

FIG. 3.—HAY PRESS.

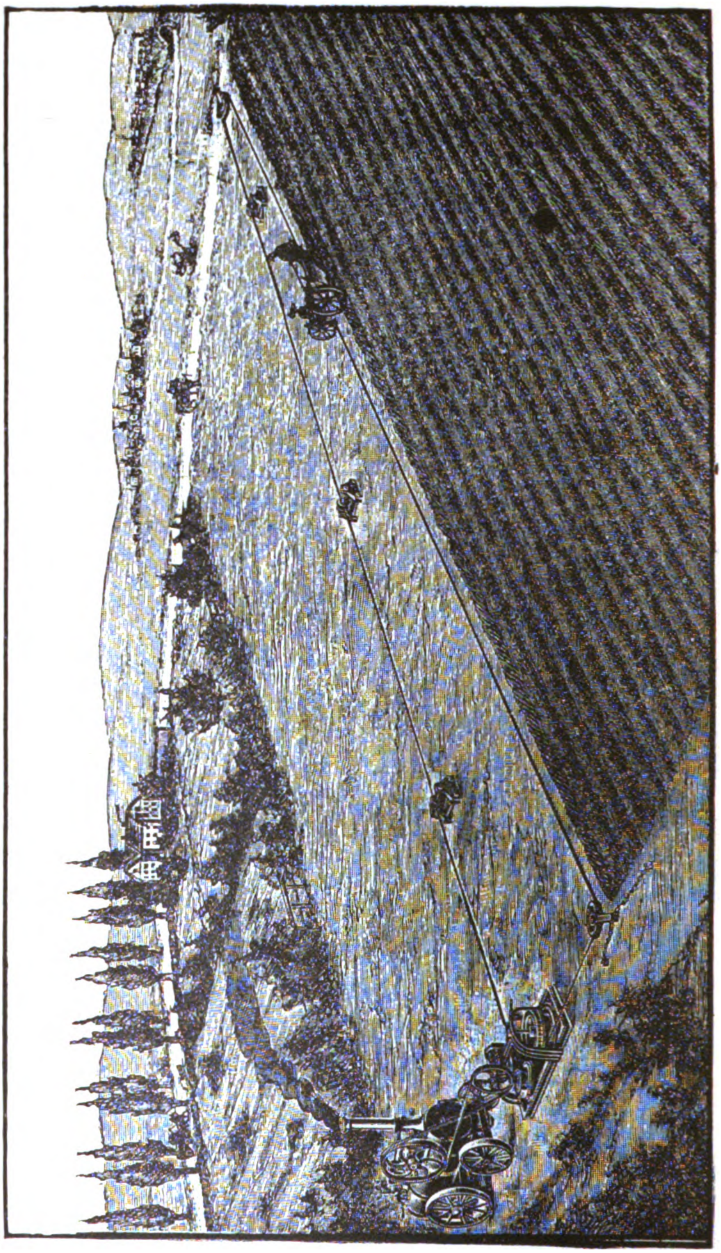

FIG. 4.—WINDLASS FARMING.

husking process, satisfactory results have been obtained, especially in mountainous regions. My own belief is that a thrasher occupying middle ground, performing better work and commanding a higher price, yet not too expensive for the individual farmer, would succeed.

The horsepower of the type shown in fig. 2 begins at No. 0, designed to be operated by one donkey, and making 16 revolutions for 1, selling at $33.77, and runs up to No. 4, to be operated by two horses or oxen, making 18½ revolutions for 1, selling at $52.11.

Hand-power hay presses have an extensive sale. I have never yet seen a steam or horse power press in actual operation. The press shown in fig. 3 is the ordinary type. These devices nominally require two men at the lever, but I have usually seen three, and even four, in practice. A density of 440 pounds to the cubic meter (about 1 cubic yard) is claimed for this press. The cost of these machines runs from $77.20 to $91.67 without wheels, or $14.47 extra with wheels. They bale 3 tons of hay per day of ten hours.

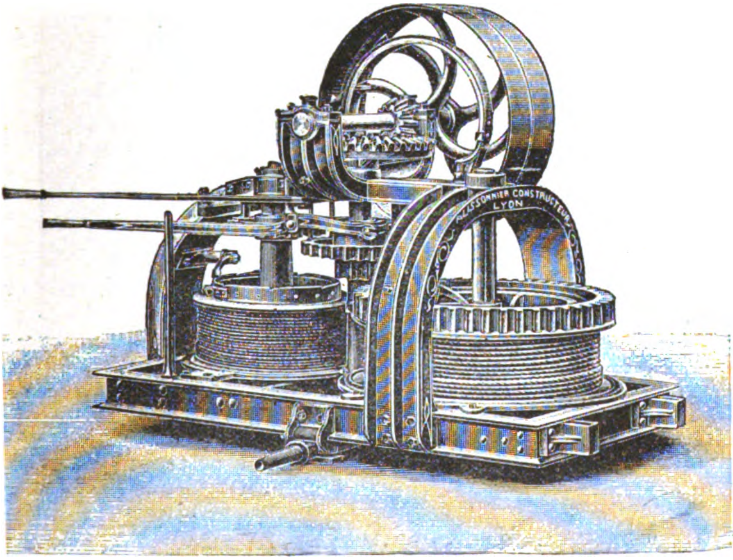

FIG. 5.—WINDLASS.

Considerable French farming, especially in the vine country, requires the use of a windlass in the cultivation of the soil, in the manner shown in fig. 4. This system brings into demand a long list of special devices. A windlass like fig. 5, for cultivating from

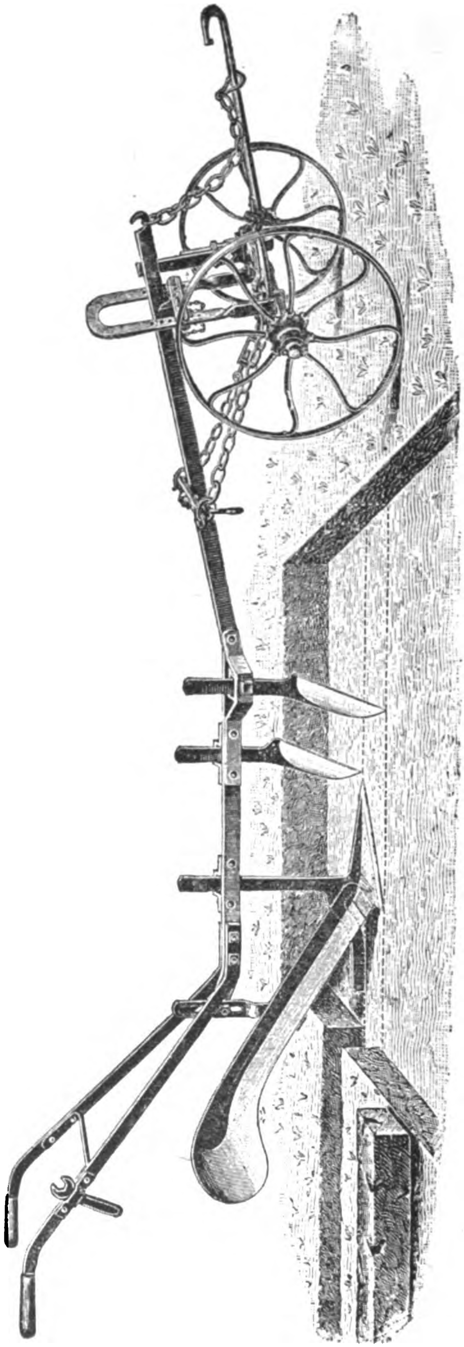

FIG. 6.—PLOW.

3,000 to 6,000 square yards per day, requiring the use of a 5, 6, or 8 horsepower engine, together with 820 yards of steel cable, costs $752; one for two horses, with 200 yards of cable, costs $212.

A multitude of plows and plow points, among them probably the best that we have to offer, is advertised. I select one type used for making trenches, and particularly useful in a country like this, depending largely upon irrigation rather than rain for a successful season. This apparatus (fig. 6) cuts a trench 17 centimeters (6.69 inches) wide and as deep as desired up to 17 centimeters. It weighs 163 pounds and sells for $23. I also draw attention to a vineyard plow (fig. 7), cost $14.47, or $1 extra with the sharp point appearing in the cut. This plow is intended for spring and fall work, the sharp point being almost indispensable in the exceedingly stony soil frequently encountered.

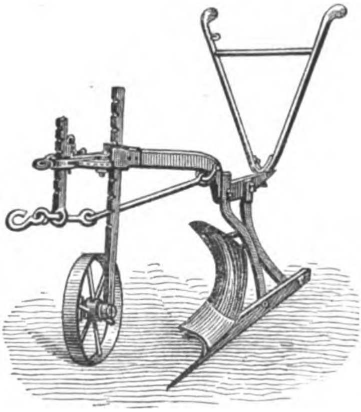
FIG. 7.—VINEYARD PLOW.

Fig. 8 is a small injector selling for $7.33, for use in applying the liquid required to fight the phylloxera and white worms. The piston and spring are of copper and the point of steel. With this injector, a determined quantity of liquid may be applied where desired.

The cheapest winnowing machine of which I know commands $9, and the prices run up to $37. The cheaper ones are rough looking and unpainted.

A highly recommended device is the separator shown in fig. 9. It is made in two parts, the first intended to free wheat from grains of oats and barley, and also to free oats or barley from other

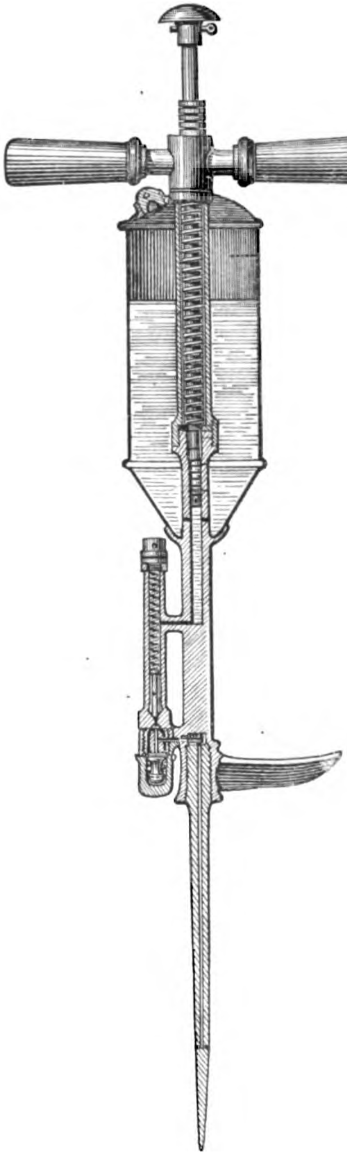

FIG. 8.—INJECTOR.

grains; the second part removes from wheat not only round grains of vetch, mustard, and smut, but also divides the wheat itself, according to size, for seeding. These separators sell for $59.83, $66.62, $88.78, and $125.

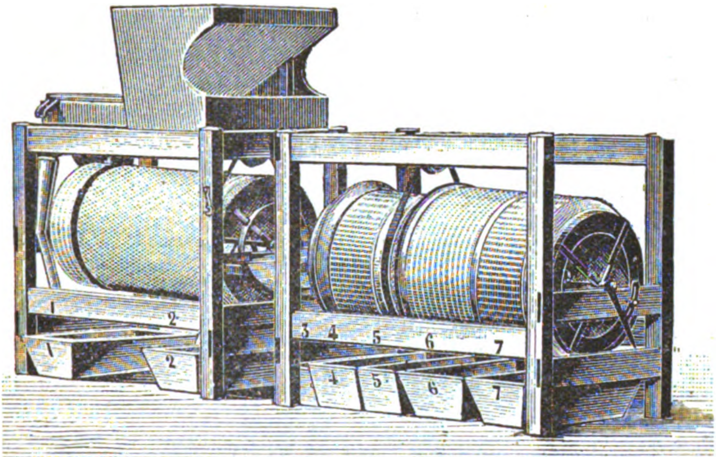

FIG. 9.—GRAIN SEPARATOR.

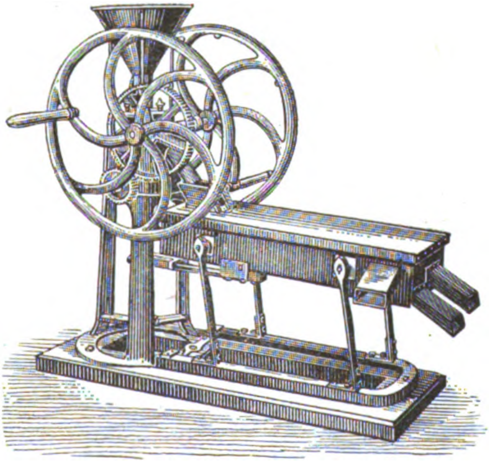

FIG. 10.—HANDMILL.

Fig. 10 is a handmill capable of producing 30 pounds of flour per hour, the price of which is $64. The grain is separated into flour, coarse flour (gruaux), and bran.

There is a steady demand for root cutters, such as is shown in fig. 11. Beets, carrots, and potatoes are used extensively in France for stock feed, and must be chopped before they are available. They are fed alone, or with chopped straw after fermentation. More often still, they are cooked. I recall as the most familiar sight in the kitchens of the French farmers of my acquaintance the huge caldron of beets and carrots stewing together; alongside, a similar caldron filled with a vegetable soup for the family and eaten three times a day, with usually very little else than bread, wine, and cheese.

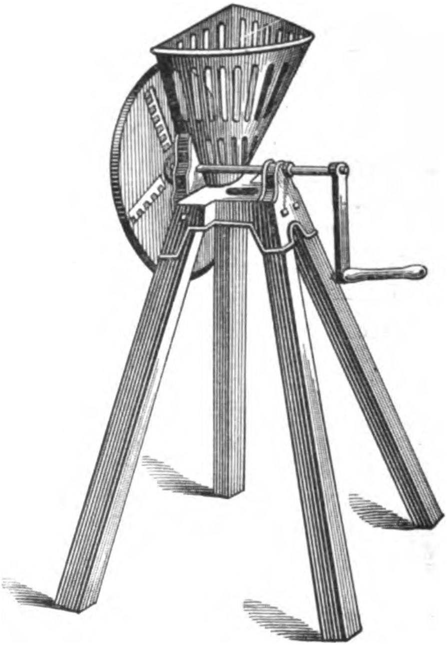

FIG. 11.- ROOT CUTTER.

The vegetable cutters sell for from $5 to $12. A root washer selling for $36 and upward is a useful device, also, to the growers of beets, potatoes, and similar tubers.

Within recent years, vine shoots have been much fed to stock, especially in the south where grass and hay are rare and expensive. These shoots must be ground, however, and to perform the work a machine exists, which sells for from $55 to $100.

Large creameries are seldom encountered in France, but the individual farmer is rapidly learning that the old-fashioned methods of making butter will not do, and is buying low-priced forms of modern machines. A good many of the types are imported, but comparatively few are from the United States.

I do not pretend to have made any discoveries in the foregoing, my object being merely to point out certain implements relatively uncommon in the United States, in the hope that our manufacturers may hereafter take a keener interest in supplying a market which merits more of their attention than it now receives.

ROBERT P. SKINNER,
Consul-General.

MARSEILLES, *September 28, 1902.*

NEW LIFE-SAVING BOAT IN NORWAY.

Captain Doenvig, of Horten, Norway, has lately made a trial of a newly invented lifeboat, the result of which seems very satisfactory. The trial was made in the presence of representatives of the press, the navy, and the merchant marine. Experts claim for the new invention that it will safely carry its load of human beings through any storm. Below I give a short description of this boat, which may prove of importance to seafaring people all over the world.

The apparatus, or buoy, is round as a globe, only a little flattened at the bottom. It is made from solid sheet iron of the following thicknesses: At the bottom five-sixteenths of an inch, on the sides three-sixteenths of an inch, and at the top one-eighth of an inch. The diameter of the buoy is 8 feet; the height 6½ feet. The buoy has a double bottom and draws 2½ feet of water when loaded. The inside of the buoy is entered through three water-tight trapdoors.

Under the deck, which is located about 1 foot below the water line, are placed 4 galvanized tanks, with capacity for holding about 140 gallons of fresh water. Alongside the wall runs a low bench to sit on, and the space underneath it is to be filled with canned goods. In the center of the inner room is a funnel that can be shoved up, thus letting fresh air into the buoy. In the top are three small windows, partly for the purpose of letting in light, but also for use in sending up rockets. The buoy is provided with a movable keel which can be let down from the inside; also with a rudder which can be applied in the same manner. Assisted by small oars, which are kept inside, the buoy can be propelled to land in fair weather. On the outside of the buoy is a cork belt, on which the men may stand and row. Further, the buoy is supplied with an anchor and 100 feet of steel rope and with sails, the air funnel serving as mast.

There is no danger that this lifeboat will get dashed to pieces when departing from the sinking ship, as it may simply remain on board until the ship sinks, and it will then float up. The cost of the buoy will be about $500, its weight about two tons, or practically the same as that of a large lifeboat, and it will have accommodations for twenty persons. It is also claimed that this new lifeboat will require far less deck space on board ship than the ordinary lifeboats.

Some years ago the inventor, Captain Doenvig, was in a shipwreck off the coast of Virginia, which bereft him of his family, and ever since he has been deeply interested in the construction of a lifeboat which may be serviceable under all circumstances.

HENRY BORDEWICH,
CHRISTIANIA, *September 18, 1902.* *Consul-General.*

NEW IRON FIELDS IN NORTHERN NORWAY.

Discoveries of extensive iron-ore fields have again been made in northern Norway, this time in the district of South Varanger, on the coasts of the bay of the same name, near the Russian border lines.

The discovery was first made some two months ago. Samples of the ore sent to Christiania have been analyzed by the municipal chemist, who pronounces it to contain as low as 0.07 per cent titanium, which is considered a very good indication. The presence of titanium in large quantities retards the melting process of the ore, and consequently reduces its value.

Analyses of two samples showed the ore to hold, respectively, 56.8 and 49.4 per cent iron, 0.07 and 0.35 per cent titanium, with a touch of sulphur and phosphorus. The tests have thus given very satisfactory results, and it is believed that these new mineral fields will in time become of great economic value to the country. By actual surveys made, they cover a very large territory. Their proximity to the sea and good harbors are also important features in their favor.

It will be remembered that the export of ore from Narvik, Ofoten, is expected to reach 1,000,000 tons per annum. This export will begin in 1903.

The foreign consuls at Vadsö are receiving inquiries regarding the fields from speculators in their respective countries, who show much interest in the developments.

HENRY BORDEWICH,
CHRISTIANIA, *September 25, 1902.* *Consul-General.*

COCOA BUTTER IN THE NETHERLANDS.

The following reports are submitted in answer to a Department instruction (dated July 16, 1902) made at the instance of a New York firm.* Consul-General S. Listoe, of Rotterdam, writes:

Cocoa butter is a by-product of the manufacture of cocoa powder. It is derived from cocoa beans by the following process of manufacture: The beans are roasted, separated from the husks, and ground; the fluid cocoa, obtained by grinding, is placed in steam-heated hydraulic presses, which bring it under a pressure of 60,000 kilograms (about 132,000 pounds) by 75 atmospheres, and about 30 kilograms (66 pounds) of butter is pressed out of 100 kilograms (220 pounds) of fluid cocoa. The butter flows off in liquid form and is caught in molds, where it is given time to cool and harden.

There are no firms engaged exclusively in the manufacture of cocoa butter; the manufacturers producing the largest quantities of cocoa powder are also the largest producers of cocoa butter. The principal manufacturers are:

C. J. van Houten & Son, Weesp.
Nederlandsche Cocoafabriek, Helmond.
H. de Jong, Wormerveer.
Betke's Hollandsche Cocoafabriek, Amsterdam.
F. Korff & Co., Amsterdam.
D. M. Grootes Brothers, Westzaan.
A. Francken & Co., Koogaan de Zaan.
A. Driessen. Rotterdam.
Bensdorp & Co., Amsterdam.
Erven Caspar Flick, Amsterdam.
W. J. Boon & Co., Wormerveer.

The bulk of the cocoa butter produced in the Netherlands is sold by monthly public auctions; these auctions take place at Amsterdam every first Tuesday of the month, and are held by Amsterdam brokers, under the supervision of a "Deurwaarder" (constable in civil cases), at the request of one or more cocoa-butter manufacturers. The goods can be inspected the day before the auction is held, in one of the Amsterdam warehouses.

All bids are to be made by sworn brokers for their principals. Purchasers must receive the cocoa butter bought within two weeks from the date of the sale. When the goods are left longer, all risks, storage costs, and expenses incurred are for account of the buyers.

Orders for foreign account are executed by Dutch commission merchants, who again buy through the sworn brokers, a sworn broker not being able to purchase for foreign account, as his principal must reside in the Netherlands.

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*To which ADVANCE SHEETS have been sent.

In 1901, 1,081 tons of Dutch cocoa butter were sold in the auction sales at Amsterdam.

On January 1 last, the average market price of cocoa butter was 0.69 florin (27.6 cents) per one-half kilogram (1.1 pounds), and on July 1 last, the article was sold at 0.74¼ florin (29.7 cents) per one-half kilogram.

Cocoa butter is used principally by confectioners, but also to a limited extent by pharmacists and in the manufacture of fine fancy soaps.

Mr. F. D. Hill, consul at Amsterdam, says:

Cocoa butter is manufactured in the following manner: The cocoa beans are roasted, and after the shells are taken off the beans are ground and the cocoa butter is pressed out by means of hydraulic presses.

Cocoa butter being a by-product of cocoa, there are no firms engaged exclusively in the manufacture of the same. The principal cocoa manufacturers of this country are:*

Hollandsche Cocoa en Chocolade Fabriek voorheen Bensdorp & Co., Amsterdam, Bussum and Cleve.

Internationale Cocoafabrieken (J. & C. Blooker), Amsterdam.

Maatschappy Rademaker, Scheveningen.

J. Veen & Co., Sneek.

The bulk of the cocoa butter is disposed of at monthly public sales held at Amsterdam.

The terms and conditions of the public sales of cocoa butter, held monthly by the firm of C. J. van Houten & Son, of Weesp, which may answer as a sample of all, are the following:

> The cocoa butter is sold at so many cents per one-half kilogram (1.1 pound), sound or otherwise, whether examined by the buyers or not, and without guaranty or further responsibility.
>
> Fractional weights, if less than one-half a kilogram, are reckoned as half kilograms; delivery and further charges after scaling, are for buyer's account.
>
> The buyer's account is debited with 1 per cent for auction charges.
>
> A tare allowance of 2½ kilograms (5.5 pounds) per bale is deducted from the account.
>
> Prompt cash payment must be made, with deduction of 1 per cent discount, delivery to be made within fourteen days after the sale, delay in that case being for account and risk of the buyer.
>
> The sellers reserve to themselves the right of refusing an offer, if they are not certain as to the bidder's responsibility, unless he be in a position to immediately provide sufficient guaranty. Purchases can be made only in the name of one of the brokers in the article.

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* In addition to those mentioned above, also given by Consul Hill.

The sales are made on customary "fall-of-the-hammer conditions, and without commission to the second highest bidder. The cocoa butter is packed in bales of eight cakes, each cake being separately wrapped in strong paper.

COPRA PRODUCTS AT MARSEILLES.

Under date of July 16, 1902, a Department instruction was sent to the consul-general at Marseilles, asking for information in regard to cocoa butter. The reply follows:

I am unable to determine to my own satisfaction whether information is desired concerning cocoanut butter, which is manufactured in Marseilles, or cocoa butter, which is quite another product and is not manufactured in this city. In the English language, the word "cocoa" is used popularly to indicate both the copra palm, one of the cocos, and the *Theobroma cacao* from which is gathered the bean afterwards manufactured into chocolate and cocoa butter.

Cocoa butter is manufactured in England and Holland, and is sold in a large way at monthly auctions in Amsterdam. To produce this article, the cocoa beans are decorticated and roasted until the butter within liquefies. Pressure is then applied, and the butter runs out in a fairly pure state. It solidifies at 23° C., liquefies at 29° C., and rarely becomes rancid. It is used in the drug and perfumery trades.

Copra butter, or cocoanut butter, is an article of Marseilles origin, usually sold under some proprietary designation. As credit should be given to whom it is due, I may say that the firm of Rocca, Tassy & de Roux first developed and made practical the manufacture of an edible grease from copra oil. They stand high in the oil trade, and have recently erected works in Hamburg also. Their methods are guarded as a trade secret, and their marks are all protected as completely as possible. Magnan frères have more recently succeeded in producing a satisfactory butter by independent experiments, and some German houses are now doing the same thing.

The manufacture of copra oil is nowhere so extensively carried on as in Marseilles. From 55,000 to 65,000 tons are made annually by the following concerns, principally:

Rocca, Tassy & de Roux, 22 rue Montgrand.
Magnan frères, 14 Allées de Meilhan.
Charles Diemer et Cie, 1 rue Picpus.
Fritsch et Cie, 7 Place Estrangin Pastré.

The effort to extract an edible grease from an oil produced upon so vast a scale and formerly available only for the manufacture of soap, gave promise of valuable returns if successful; and that this promise was not delusive may be judged from the circumstance that the factory of Rocca, Tassy & de Roux, which produced 25 tons of butter per month in 1900, now turns out 600 tons per month. I imagine that the success of Messrs. Magnan frères has also been considerable. The butter is not at all a by-product, but the objective product of the manipulation of the oil, as in the factory of Messrs. Rocca, Tassy & de Roux, 7,200 tons of butter are obtained from 8,000 tons of oil per annum in a year of maximum results.

The butter of Messrs. Rocca, Tassy & de Roux is styled "vegetaline" and "cocoaline," the greater demand being for the former. The first named melts at 26° C. and the latter at 31° C., being by that fact better suited for warm climates. Messrs. Magnan frères sell their product as "cocose." The best export markets at present seem to be Holland, England, Norway and Sweden, and Denmark. It is offered for sale in tins, and is almost tasteless. The manufacturers have no special means of knowing whether it is used by their buyers to compound with real butter or other greases. The presumption is that the product, as it leaves Marseilles, is sufficiently good to find a ready sale on its own merits. Any observations along this line would be purely conjectural. One of my informants hazards the opinion that cocoanut butter could not be compounded with real butter for commercial purposes. The activity of the manufacturers in trying to establish their private marks and in advertising their product as one of pure copra oil proves that the main object is to serve the constantly increasing public demand for comestible vegetable greases. The chances are that some portion of these greases is used either as a substitute for cocoa butter or in combination with the same. This could only be ascertained by investigation in Amsterdam or some other cocoa-butter market.

Just how these imitation butters are made is a matter of violent curiosity in Marseilles, where the story goes that as much as $60,000 has been offered for the secret. I have not been able to obtain it upon demand. It appears that expensive machinery is required. Messrs. Magnan frères worked for three years before they learned how to produce a satisfactory butter, and their experiments were very costly. They say that they do not know whether they accomplish the result by the same process as Messrs. Rocca, Tassy & de Roux or not. The oil itself is obtained by application of pressure, much like any other vegetable oil. The nut contains the following principles:

	Unit.
Oil	71.488
Zimone	7.665
Mucilage	3.588
Crystallized glycin	1.595
Yellow coloring matter	.325
Fiber	14.59
Loss	.392

The crude oil is solid, fusible at 20° C., and reddish yellow in color. It becomes rancid quickly. In this state it contains oleic, margaric, caproique, caprilique, caprique, laurique, myristique, and palmitique acids. Copra oil is thus analyzed:

	Per cent.
Olein	45
Margarin	5
Conia	35
Palmitin	10
Free acids	3

The oil having by nature much the consistency of genuine butter, the main problem has been to bleach it, to remove the principles which cause rancidity, and to increase the point of fusion. The bleaching operation is doubtless accomplished by the free use of fuller's earth, which, being beaten in the oil, absorbs the coloring matter and is then precipitated and removed. What next occurs is difficult to say; certainly, a chemical process is employed. English manufacturers have lately learned something of the bleaching method as in use here, and are employing it.

The resultant of 200 kilograms (440.9 pounds) of copra, on being pressed at varying temperatures, is as follows: Forty-two kilograms (92.5 pounds) of oil at 14° to 15° C.; 7 kilograms (15.4 pounds) of oil at 18° to 19° C.; 10 kilograms (22 pounds) of oil at 24° to 25° C.; 14 kilograms (30.8 pounds) of oil at 29° to 30° C.; 45 kilograms (99.4 pounds) of oil at 40° to 45° C.; making a total of 118 kilograms (260 pounds) of oil, and 77 kilograms (169 pounds) of cake, leaving a loss in waste of 5 kilograms (11 pounds).

What the practice is in extracting oil for subsequent refining as butter I do not know, but I judge that the product of the several pressings is kept separate, the first being always the best. In actual manufacturing, five different operations at as many temperatures are most improbable, but I give the details for what they may be worth in shedding light upon the subject.

Present prices of copra products f. o. b. Marseilles, per 100 kilograms (220 pounds), are now quoted:

Article.	Price.	
	Francs.	
Vegetaline	89.00	$17.18
Cocose	87.00	16.79
Cochin neutre	77.00	14.86
Cochin neige	74.00	14.28
Ceylon quality	71.50	13.80
Ordinary soap	70.00	13.51

The above prices for oil in barrels, of Marseilles make, are for September and October delivery.

The declared value of exports of copra oil from Marseilles to the United States has been as follows during recent years:

1902	$31, 181
1901	84, 238
1900	105, 975
1899	41, 000
1898	80, 500

ROBERT P. SKINNER,
Consul-General.

MARSEILLES, *September 18, 1902.*

FRENCH WINE HARVEST AND SALES.

HARVEST.

The vintage which began last week in the great producing Departments of the south will continue the rest of this month, terminating in October.

In Hérault, the insects, etc., have considerably diminished the production, leaving hope for only one-half a harvest as compared with the years 1899 and 1900, or some 6,000,000 hectoliters (158,502,000 gallons). The quality, however, will be excellent.

In the Aude, the weather has been propitious, and it is hoped the quality will be good.

In Roussillon, everything points to a good quality, the quantity being somewhat less than preceding years.

In the Department of Lot-et-Garonne, harvesting will hardly begin before October 1, and it is thought the yield will be about one-half of last year's; the quality will be good, however, if too much rain does not fall between now and harvest. Very little old wine is for sale. Prices are from 170 to 190 francs ($32.81 to $36.67) per tun, barreled.

In Bordelais, recent rains have aided the grapes to ripen, but warmth is wanted at present. Owing to treatment, the greater part of the vineyards are free from cryptogamic maladies.

In Dordogne, indications are that the quality will be good and the quantity small. Some sales of white wine have been made at Bergerac at 300 francs ($57.90) per tun, barreled; and at Montbazillac, from 350 to 400 francs ($67.55 to $77.20). For old red wines, the present price is from 80 to 100 francs ($15.44 to $19.30) per tun, not barreled, for the ordinary, and from 120 to 140 francs ($23.16 to $27.02) for the superior.

In Poitou, the harvest will be mediocre for the red wines; the white vines are full of grapes and will yield abundantly, but for good quality warm weather must continue. In the presence of a reduced vintage, prices are high.

In Burgundy the harvest is very late. Mildew has appeared in the region of Montrachet, where, it is said, there will be but little wine, and that of a mediocre quality.

In the Loire, on account of frost and hail, the outlook is far from satisfactory. Prices are advancing, and the proprietors who have wines do not care to sell.

In Algeria, the harvest has been general for the last ten days. The wines are generally alcoholic. For the bouschets, 80 to 90 centimes (15.44 to 17.37 cents) per degree is asked. In the Sahel, vats of wine from ordinary cuttings, of which the quality is good, cost 1.10 to 1.20 francs (21.23 to 23.16 cents) per degree for the 11½ and 12 degrees.

Some samples of the new Algerian wine have already reached Paris, and are pronounced good and consistent as to color and degree.

SALES.

The quantity of wines removed from the warehouses of the owners from the beginning of the season (September 1, 1901) until the end of July last was:

From	Quantity.	
	Hectoliters.	*Gallons.*
September 1, 1901, to June 30, 1902	37,574,086	992,594,630
July, 1902	3,700,442	97,754,576
Total	41,274,528	1,090,349,206

On August 1 last, the stock on hand of the wholesale dealers amounted to 14,169,284 hectoliters (374,409,975 gallons), being some 302,000 hectoliters (7,977,934 gallons) more than on the 1st of July previous. Merchants appear disposed to increase their stock, in view of the deficit of the approaching harvest, which is approximated at 45,000,000 hectoliters (1,188,765,000 gallons), as compared with 1,532,186,000 gallons last year.

THORNWELL HAYNES,
Consul.

ROUEN, *September 17, 1902.*

WALNUT CROP OF FRANCE IN 1902.

It is somewhat early to give exact information regarding this year's walnut crop in France, as owing to unfavorable weather conditions it has been retarded. All the advices I have received agree that on account of the inclement weather which prevailed during last spring and the first part of the summer, there will be a reduced production of walnuts, some placing the crop at 30 per cent below that of a normal year. If the present fine weather will last, it is thought that the quality of the nuts will be good.

To form an estimate of this year's walnut crop, in the following tables are given the production of table walnuts in the principal nut-growing Departments of France for the past five years, the value of the crops, and the average value per 110.23 pounds.

The statistics of 1897 to 1900, inclusive, are official; those for 1901, are estimated.

Production of table walnuts in France from 1897 to 1901.

Department.	1897.	1898.	1899.	1900.	1901.*
	Tons.†	*Tons.*†	*Tons.*†	*Tons.*†	*Tons.*†
Dordogne	5,000	3,000	3,000	3,000	6,500
Lot	6,755	6,748	6,725	6,405	10,000
Corrèze	4,000	4,000	2,801	3,783	2,500
Charente	408	550	650	875	3,000
Isère	2,824	2,140	2,077	2,347	5,000

* Estimated. † Ton of 1,000 kilograms (2,204.6 pounds).

Valuation of walnut crop.

Department.	1897.		1898.		1899.		1900.	
	Total value.	Per 110.23 pounds.	Total value.	Per 110.23 pounds.	Total value.	Per 110.23 pounds.	Total value.	Per 110.23 pounds.
Dordogne	$482,500	$4.82½	$405,300	$6.75½	$405,300	$6.75½	$347,400	$5.79
Lot	286,817	2.12	286,450	2.12	201,685	1.93	321,403	2.51
Corrèze	308,800	3.86	262,480	3.28	162,178	2.89¼	418,903	4.95
Charente	34,605	4.25	42,460	3.86	55,198	4.25	77,682	4.44
Isère	414,195	7.33	375,422	8.75	361,572	8.70	451,308	9.65

It is estimated that the Department of the Isère will only produce 1,750 tons of nuts this year.

It is also too early to give definite prices for the new crop of walnuts. I have heard of some sales being based on the following prices:

		Francs.	
Cornes:			
First quality	per 220.46 pounds...	62=	$11.97
Second quality	do......	50=	9.65
Marbots:			
First quality	do......	72=	13.90
Second quality	do......	62 to 66=	$11.97 to 12.74

The above prices are f. o. b. Bordeaux.

		Francs.	
Chabertes	per 220.46 pounds...	70=	$13.51
Mayettes	do......	80=	15.44
Parisien	do......	80=	15.44
Franquette	do......	80=	15.44

The latter prices are for the nuts delivered at the orchards.

The Journal Commercial et Maritime of Marseilles, of September 26 last, gave the following quotations per 100 kilograms (220.46 pounds) f. o. b. Marseilles: Grenoble commercial, 92 to 95 francs ($17.76 to $18.34); cornes, 70 francs ($13.51); and marbots, 80 francs ($15.44).

The rate of freight on walnuts from Havre to New York by the steamers of the Compagnie Générale Transatlantique (French Line) is 20 francs ($3.86) per cubic meter (35.316 cubic feet); by the American Line via Southampton, 30 francs ($5.79) plus 10 per cent per 600 kilograms (1,322.76 pounds); by the Barber Line, 25 francs ($4.82½) per 1,000 kilograms (2,204.6 pounds).

A. M. THACKARA,
Consul.

HAVRE, *October 2, 1902.*

BEET-ROOT CULTURE IN FRANCE: SUGAR YIELD.

The culture of beets is one of the greatest industries of northern France. The law of 1884 permitted it to flourish in spite of keen foreign competition. But at present, the industry is threatened. The international congress held at Brussels, to the terms of which France has agreed, will destroy all the benefits of the law of 1884. Foreign markets will be closed to French sugar. The only market will be a home one. The consumption of sugar in France at present is annually about 450,000 tons. The production, which is more than 1,000,000 tons, must be cut down more than 50 per cent—that is, the land utilized for raising beet roots must be reduced one-half.

TAXES.

Sugar producers and manufacturers say that the market would be better if the heavy taxes upon this aliment were taken off. If this is done, the buyer, instead of paying 50 to 60 centimes (9.65 to 11.58 cents) per livre (1.1 pounds), will find it everywhere for 25 to 30 centimes (4.825 to 5.79 cents)—the only condition, it seems, which will save the culture of the beet root. This solution is advocated not only by the agricultural associations in the regions directly interested, but in all others. The project presented some time ago by M. Caillaux, which will doubtless be taken up when the Chambers reassemble in October, provides that all bounties, without any distinction, be suppressed; that the manufacture of sugar become the same as that of any other product; that all accessory taxes be abolished; and that the principal tax be reduced from 60 centimes to 40 centimes (11.58 cents to 7.72 cents). Very few believe, however, that this will be done.

SUGAR YIELD.

The Journal Officiel publishes the results of the sugar harvest ended September 1, 1902. The number of factories in activity was 332, and they used 9,350,851,795 kilograms (20,614,887,867 pounds) of beet roots, against 8,717,439,216 kilograms (19,218,466,496 pounds) for 334 manufactories in 1900–1901. The average for each factory is thus shown to be 28,165,216 kilograms (62,093,035 pounds), against 26,100,117 kilograms (57,540,318 pounds) for 1900–1901. The total output of refined sugar has been 1,111,069,922 kilograms (2,449,564,750 pounds), which is greater by 18,079,054 kilograms (39,857,082 pounds) than that of the immediately preceding harvest. The yield of refined sugar is 11.88 per cent of beet root, against 12.53 per cent in 1900–1901.

THORNWELL HAYNES,
Consul.

ROUEN, *September 20, 1902.*

FRENCH SUGAR BOUNTIES.

The following is a translation of a French Presidential decree, dated August 2, 1902:

ARTICLE 1. The bounties, which from September 1, 1902, will be granted on home or French colonial sugar declared for exportation to other countries and French colonies, not subject to the metropolitan customs tariff, are fixed as follows:

Raw sugar in powder or small crystals, yielding at least 98 per cent in the case of beet-root sugar, or 97 per cent for colonial sugars, calculated before the deduction for waste in refining, per 100 kilograms of refined sugar, 1.27 francs (24.511 cents per 220.46 pounds). Sugars of this category liable to duty and exported direct by the manufacturer himself, when they polarize at least 99.75 per cent, will be calculated according to their gross weight as refined sugars without any deduction whatever.

Raw sugar yielding from 65 to 98 per cent in the case of beet-root sugar, or from 65 to 97 per cent in the case of colonial sugars, per 100 kilograms of refined sugar, 1.11 francs (21.423 cents).

Candied sugars calculated at their legal coefficient, refined sugars in loaves or pieces, perfectly refined, hard and dry, per 100 kilograms (net weight), 1.43 francs (27.599 cents).

"Vergeoises" per 100 kilograms of refined sugar, 1.43 francs (27.599 cents). Refined sugar in crystals or powder, yielding at least 98 per cent per 100 kilograms of refined sugar, 1.27 francs (24.511 cents). When the sugars of this last category polarize at least 99.75 per cent, they will be considered as pure refined sugars, and certificates of exportations will be admitted in the discharge of the obligations for temporary admission for their whole weight without any deduction whatever.

Compared with the decree which went into effect September 1, 1898, the bounties in each category have been lessened 118 per cent.

THORNWELL HAYNES,

ROUEN, *September 11, 1902.* *Consul.*

FRENCH WHEAT HARVEST.

The Marché Français and the Bulletin des Halles publish to-day the first estimates made of the coming wheat harvest. The former gives it at 134,897,986 hectoliters (382,840,484 bushels), with a surface of 6,804,832 hectares (16,814,740 acres). This is an average of 17.86 hectoliters (50.69 bushels) per hectare (2.471 acres), against 17.58 hectoliters (49.89 bushels) last year. The Bulletin des Halles estimates the present crop at 125,202,300 hectoliters (355,324,127 bushels).

It will be remembered that last year's harvest, according to official figures, amounted to 107,203,036 hectoliters (304,242,216 bushels).

Every year, before harvesting has hardly begun, the journals of France begin to publish estimates of the year's production of wheat. These estimates are inspired, in a year of poor harvest, by the ardent wish that France may produce enough of the grain for her own consumption, and in a good year, by the hope that she may rise to the dignity of an exporting nation.

CONSUMPTION.

The annual consumption of wheat in France varies little. Considering the quantity necessary for alimentation (omitting that necessary for industry and planting), the average figure is not far from 93,000,000 hectoliters (263,934,000 bushels).

The annual amount consumed since 1831, expressed in bushels and averaged decennially, is as follows:

Period.	Seed.	Industry.	Food.	Total.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
1831-1841	31,907,634	7,767,606	155,902,692	195,577,932
1841-1851	34,847,802	6,197,958	187,566,258	231,612,018
1851 1861	38,741,538	10,100,442	209,234,388	258,076,368
1861-1871	41,048,832	11,161,854	236,167,008	288,377,694
1871-1881	41,148,162	11,386,056	262,356,072	314,890,290
1881-1891	40,325,122	13,866,468	292,478,604	346,670,214

The quantity consumed per inhabitant was 4.65 bushels, from 1831 to 1841, and 7.63 bushels from 1881 to 1891.

PRODUCTION.

The production, which was 8,456,724 metric tons* in 1892, fell to 6,592,409 tons in 1897, and rose to 9,945,989 tons in 1899; in 1901, it was 8,274,400 tons. If not augmenting, the production, taken as a whole, does not diminish; but the surface planted decreases. In 1896, there were 7,061,739 hectares (17,449,557 acres) sown, which yielded an average of 16.55 hectoliters (46.968 bushels) per hectare (2.471 acres); in 1899, the surface was reduced to 6,940,000 hectares (17,148,740 acres), but the average production was 18.50 hectoliters (52.503 bushels) per hectare (2.471 acres).

IMPORTS.

In spite of the progress made during recent years in the culture of wheat, France is an importer, as the following figures for the decennial period 1890 to 1899 testify:

Year.	Imported.	Exported.
	Tons.	*Tons.*
1890	1,055,201	587
1891	1,960,508	679
1892	1,884,237	841
1893	1,003,164	1,334
1894	1,249,619	1,897
1895	450,730	9,027
1896	158,477	1,131
1897	522,659	561
1898	1,940,549	1,745
1899	143,781	1,928

NATURE OF FRENCH WHEAT.

French millers contend that French wheat does not contain sufficent gluten (azotic matter) to make good flour, and that it should be mixed with foreign wheat in a proportion which varies from 15 to

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* Of 2,204.6 pounds.

30 per cent. This is the reason why, with foreign prices higher than home prices, importation continues. Roumanian wheat last year contained 40 per cent of gluten, and foreign wheat in general has from 35 to 36 per cent, while French grain possesses from 20 to 25 per cent.

Few cultivators of this country, in choosing seed wheat, prefer the varieties rich in gluten, though many think that if they did, the home product would command a better price. It is only too true, however, that the quantity of the gluten depends less upon variety than on the natural conditions of cultivation. Some of the hard wheats of Algeria and Russia, when cultivated in the climate of Paris, lost their richness of gluten. Members of the Academy of Science say that the gluten increases very slowly with notable augmentations of azotic fertilizers, and that it diminishes as the quantity of phosphoric acid applied to the wheat increases. Phosphoric acid develops the production of starch, which means correlatively a diminution of gluten. It is well known that phosphoric fertilizers are mostly used to augment the yield, and careful studies show in the north of France, where these fertilizers are so abundantly employed, that wheat was very much more rich in gluten fifty years ago than to-day.

PRICE.

The average price for the last two harvests has been as follows:

From—	1900-1901.		1901-2.	
	Francs.		*Francs.*	
August to January	18.48	$3.57	20.48	$3.95
January to August	18.83	3.63	21.48	4.15

THORNWELL HAYNES,
Consul.

ROUEN, *September 25, 1902.*

NORWEGIAN CROPS.

It is a well-known fact that Norway, even in the most favorable seasons, is incapable of raising enough cereals for the consumption of its population. Consequently, large quantities of grain and other provisions are imported annually. The annual import of grain, flour, and other breadstuffs averages about $12,000,000 per annum, and that of meats and pork about $225,000. The present season has proved itself a very poor one for the Norwegian farmers, and reports of destructive frosts and failures of crops are coming in from nearly all parts of the extensive territory. A cold and backward spring, scarcely any summer, and a wet autumn, with early frosts, have done great damage to all crops. There will be a scarcity of fodder also, as the rains destroyed much of the hay before it could be harvested. It is estimated by the authorities that the yield of grain for the whole Kingdom will be about one-third less than the average. As the average annual value of the grain crops of the country is estimated at $54,000,000, the loss is severe.

The authorities are aware that it will become necessary to furnish seed grain to farmers in the most needy districts, and are already preparing to meet the issue. Potatoes and vegetables also give very poor returns; fruits, about the average.

The market values of principal farm products at the present writing are:

Rye	per 100 kilograms*	$2.95
Barley	do	2.95
Oats	do	3.50
Flour	do	5.00
Rye meal	do	4.00
Barley meal	do	3.75
Potatoes	do	1.25
Butter	per kilogram †	.42
Eggs	per dozen	.18
Pork	per kilogram	$0.25
Beef	do	.22
Hay	per ton	$15 to 21.00
Straw	do	11 to 15.00

HENRY BORDEWICH,
Consul-General.

CHRISTIANIA, *September 18, 1902.*

GERMANY'S FOOD QUESTION AND THE NEW MEAT-INSPECTION ACT.

On April 1, 1903, the new law regarding meat inspection goes into effect. The Kingdom of Prussia will have 56 inspection stations, of which 29 will be at various ports of entry and the other 27 in the interior; in addition, there will be 17 ports of entry without inspection stations, to receive meats in transit. Many new buildings for the accommodation of the inspectors will be necessary. Microscopists, veterinary surgeons, and chemists will be employed; in all, entailing a preparatory expense that gives the law a stamp of permanency.

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* 100 kilograms=220.46 pounds.

† 1 kilogram=2.2046 pounds.

The enacted law prescribes that the meat inspection be divided as follows:

(1) Veterinary surgeons' inspection of all fresh and prepared meats (with the exception of lard).

(2) Microscopic inspection of fresh and prepared pork.

(3) Chemical examination of all prepared meats.

It is believed that the inspection will materially retard the importation of meats. Official statistics reveal some interesting facts as to Germany's dependence on foreign food products. The import of food stuffs and live animals for food purposes for the year 1901 had a value of $451,769,930, or about one-third the value of the total imports, and showed an increase of 769,000 tons over similar imports in 1900. This increase was not due to crop failures in 1900, for figures show that the harvested rye, wheat, and oat crop of that year was better than in 1901.

I have made an abstract from official figures as to the value and kinds of food imported during the years 1900 and 1901, which will undoubtedly be of interest:

Description.	1900.	1901.
Butter	$6,085,898	$6,891,290
Eggs	24,568,026	24,934,974
Geese	4,161,906	4,451,552
Chickens, live	2,554,692	2,445,688
Dressed poultry	1,593,172	2,014,670
Fish:		
Fresh	6,156,346	6,446,468
Smoked and canned	1,218,560	1,340,178
Herring, salted	9,047,808	9,858,674
Meats:		
Fresh	4,762,856	7,383,712
Prepared	6,035,918	5,097,960
Buckwheat	855,372	1,006,026
Barley	22,011,192	25,096,624
Oats	11,120,788	11,260,494
Corn	30,670,584	28,510,258
Rye	22,859,662	21,294,812
Wheat	40,725,864	67,283,076
Beans	1,206,660	1,251,404
Pease	2,285,990	2,408,984
Flour:		
Wheat	273,938	278,936
Rye	64,974	88,298
Fresh apples	1,895,670	3,862,026
Fresh pears	815,150	1,099,560
Dried fruits	6,066,392	4,782,372
Oleomargarine	4,125,730	5,148,892
Lard	16,700,698	19,809,930
Cattle under 2½ years	2,812,446	3,269,670
Cows	5,136,278	5,625,368
Oxen	6,423,620	6,425,524
Sheep	28,322	21,420
Swine	1,210,944	1,854,496

Out of the 30 articles enumerated, 24 show an increase; live poultry, prepared meats, corn, rye, dried fruits, and sheep show a decline. In the trade in live poultry and sheep, the United States does not participate.

As to our export of prepared meats, rye, corn, and dried fruits to Germany, I give the following figures (expressed in tons) covering the German imports from the United States for the last four years:

Description.	1898.	1899.	1900.	1901.
Prepared meats	45,840	34,345	20,229	16,277
Rye	248,912	70,494	21,906	38,444
Corn	1,231,685	1,246,508	1,124,602	804,234
Dried fruits	13,276	12,117	23,258	17,119

Butchers' associations in Germany have, within the past two months, held many meetings to devise means of stopping the continual decrease in the supply of live stock available. This scarcity exists throughout the whole Empire, naturally increasing the price of meat. In Berlin, for the month of June, 1902, there was a deficit of 1,964 head of cattle (slaughtered), as compared with the same month in 1901. For the last half of August (from the 16th to the 30th) there was a general decrease of 22,566 head of slaughtered stock, as compared with the same period of 1901. These figures are taken from the Allgemeine Fleischerzeitung. The decrease of available stock in the Dresden market for the first seven months of this year, as compared with the same period of last year, was: Beef, 2,014 head; swine, 23,760 head; calves, 1,955 head; sheep, 1,236 head. In Posen, pork is selling for 1 mark (23.8 cents) per pound. In Coblenz, a general advance of 10 pfennigs (2.4 cents) was made last month on all kinds of meats and sausages. It is safe to say that almost every city of more than 50,000 inhabitants has, since the 1st of January of this year, experienced an increase in the price of meats. From June, 1900, to June, 1902, the price of live hogs has risen 25.8 per cent. In laboring circles, the use of meat, due to high prices, is diminishing, which accounts for the gain of $1,223,716 in the import of fresh and smoked fish and herring, as compared with 1900.

JOHN E. KEHL,
Consul.

STETTIN, *September 13, 1902.*

PRICE OF BEEF AND SCARCITY OF CATTLE IN BELGIUM.

An article concerning the price of beef and the scarcity of cattle in Belgium recently appeared in the newspaper Le National, of Brussels. As it may be of interest to our exporters of beef and cattle, I quote therefrom:

> According to information received from a high official of the Agricultural Department, the probable increase in price of beef is caused by the poor crop of indian corn in the United States, advance in price of American cattle, extensive purchase of cattle by England in Holland—in short, by a series of causes, the effects of which are felt in all countries. In Germany, the retail price of beef has increased 10 per cent.
>
> The Department of Agriculture says it is a mistake to believe that if the frontier were free to Dutch cattle the situation would be improved. The sanitary inspection is not an obstacle, and nothing prevents the introduction of fat cattle. If cattle are dear on our market it is simply because they are also dear in Holland, where they are much in demand by English consumers. In view of the increase in price, a reduction of quarantine is asked for Dutch thin cattle, as it is claimed that quarantine is no longer justified as a sanitary measure, since no epidemic of aphthous stomatitis now exists in Holland. Those who advance such an argument forget that tuberculosis is always prevalent there, and quarantine was established for both diseases. Last year, more than 1,600 animals which arrived at the frontier were sent back to Holland on account of tuberculosis. The entry into Belgium of French cattle will not be authorized, as French cattle suffer from numerous diseases.

GEO. W. ROOSEVELT,
Consul.

BRUSSELS, *September 17, 1902.*

INCREASED COST OF LIVING IN ENGLAND.

There is some anxiety in Great Britain about the high prices which food stuffs are likely to reach during the coming winter. They are thought high enough now, and the prospect of a still greater advance is not pleasing in view of the experience for several years past of high-priced provisions and dear coal. This enhancement of the cost of living has not been accompanied by a general increase in the wage scale or in the number of possible hours of employment. Recently, a London newspaper offered consolation to careful housewives, who were complaining that the prices of potatoes were already going up, by reporting that there was no disposition in Covent Garden to believe in the possibility of a potato famine this winter, because there is this year no demand in America for foreign potatoes, that country having imported last year thousands of tons of potatoes from England and from the Continent, "so that this year, unlike last year, the whole of the English supply is coming into the English market, as well as the surplus continental supply, and the last reports show that the ravages of blight are not so serious as had been expected." The Birmingham Daily Mail has also been studying the provision market, and I inclose a copy of an article it prints, under date of September 30, 1902.

MARSHAL HALSTEAD,
BIRMINGHAM, *October 8, 1902.* *Consul.*

THE COST OF LIVING AND PROBABLE RISE IN THE PRICE OF PROVISIONS.

It is becoming increasingly difficult for the housewife of the workingman to make ends meet. Year by year the price of provisions seems to advance without a corresponding increase in her husband's wages, with the natural result that the luxuries she can buy for her family's consumption become fewer and fewer, all her ingenuity being taxed to eke out her allowance on the bare necessaries of life. Nor is it only the very poor who feel the pinch; the advances of recent years have been so considerable that they have been felt by many families in better circumstances. This season—for various reasons—another twist of the screw is being applied, and the already dismayed housewife will have to face the fact that provisions will be from 10 to 20 per cent dearer than they were a year ago. So, at any rate, said the secretary to the Federation of Grocers' Associations of Great Britain and Ireland to a reporter yesterday. With the object of ascertaining how far such a statement was borne out by facts, a Mail representative interviewed this morning the departmental managers of one of the largest grocery and provision establishments in Birmingham. What they said tended in the main to confirm the disquieting statement already quoted. Bacon, the stable article of the Englishman's breakfast, seems to be the commodity most affected. More bacon is consumed nowadays than ever before, and people demand a higher quality. The short shipments from the United States and Canada form the principal cause for the increase in this department. "Canadian bacon," said the provision manager to the Mail man, "was last week quoted dearer than you could buy some English bacon. Canada has come to the front rapidly of late years with their bacon supply, and, in my opinion, Canadian bacon is every bit as good as English. It is fed specially for the market, and is of a better shape and often of superior quality, too. The present wholesale price per cwt. of sides of English bacon is only 3s. (71 cents) more than the price of Canadian. Eight years ago Canadian bacon was 15s. ($3.57) less than English. Prices have been going up all round ever since.

Much the same progress seems to have taken place in regard to butter, which eight years ago was 6s. ($1.46) a cwt. cheaper than it is now, and the rise seems to be continuing. One cause of this is the drought in Australia and New Zealand, which has seriously affected the production in these colonies, from which a great part of the butter consumed in England is derived. The large quantity of butter now being imported from Siberia is, however, to a great extent counteracting the shortage of the supply from "down under." The price of cheese will, of course, rise in proportion. Sugar, too, and everything containing sugar, shows an upward tendency. "There are grocers in Birmingham to-day," said the grocery manager, "who are absolutely losing on every pound of certain sugars they sell. If the wholesale price continues to rise I do not know what they will do. Christmas fruits," he continued, "will be pretty even in price, though, even here, good stuff will fetch higher prices than last year. Tinned fruits—certain brands, at any rate—will go up. The growers in California and elsewhere are complaining that it does not pay them to pack fruit at the present prices. A number of the largest and best growers are, therefore, combining for having certain standards of fruit at fixed prices. The prices of tinned fruits have, of course, been ridiculously low. Although there is a heavy duty on these goods, they have been sold in England at lower prices than were obtained before the duty was imposed." Altogether, the prospect is not pleasing, and when one remembers the ever-increasing price of coal, visions rise of cheerless grates and scanty meals in many a home this winter.

MUSICAL COPYRIGHT BILL IN GREAT BRITAIN.

Under date of September 25, 1902, Ambassador Choate, of London, reports that the musical copyright bill became a law (with certain amendments) July 22, 1902, under the title of the "musical (summary proceedings) copyright act, 1902," to come into operation October 1, 1902, and to apply only to the United Kingdom. Mr. Choate incloses a copy of the bill and also of a police order regarding it. The bill provides:

A court of summary jurisdiction, upon the application of the owner of the copyright in any musical work, may act as follows: If satisfied that there is reasonable ground for believing that pirated copies of such musical work are being hawked, carried about, sold, or offered for sale, may, by order, authorize a constable to seize such copies without warrant and to bring them before the court, and the court, on proof that the copies are pirated, may order them to be destroyed or to be delivered to the owner of the copyright if he makes application for that delivery.

If any person shall hawk, carry about, sell, or offer for sale any pirated copy of any musical work, every such pirated copy may be seized by any constable without warrant, on the request in writing of the apparent owner of the copyright in such work, or of his agent thereto authorized in writing, and at the risk of such owner.

On seizure of any such copies, they shall be conveyed by such constable before a court of summary jurisdiction, and, on proof that they are infringements of copyright, shall be forfeited or destroyed, or otherwise dealt with as the court may think fit. "Musical work" means any combination of melody and harmony, or either of them, printed, reduced to writing, or otherwise graphically produced or reproduced. "Pirated musical work" means any musical work written, printed, or otherwise reproduced, without the consent lawfully given by the owner of the copyright in such musical work.

"Musical copyright" is defined in the act as the exclusive right of the owner of such copyright under the copyright acts in force for the time being to do, or authorize another person to do, all or any of the following things in respect of a musical work:

1. To make copies by writing or otherwise of such musical work.
2. To abridge such musical work.
3. To make any new adaptation, arrangement, or setting of such musical work, or of the melody thereof, in any notation or system.

NOBEL PEACE PRIZE.

The Department has received from Mr. C. L. Lange, secretary of the Nobel committee of the Norwegian Parliament, copies of a circular regarding the distribution of the Nobel prize for peace in 1903. The circular states:

> In order to be considered in the distribution of the prize for the advancement of peace, which takes place in the month of December, 1903, candidates must be presented to the Nobel committee of the Norwegian Stortung by a qualified person before February 1, 1903. The following are qualified to propose candidates: The members of the Nobel committee of the Norwegian Parliament; the members of legislative assemblies and governments of the different States; the members of the interparliamentary board; members of the commission of the Permanent International Peace Bureau; members and associates of the Institute of International Law; university professors of law, political science, history, and philosophy; persons who have received the Nobel prize for peace.
>
> The prize can be awarded to an institution or to an association.
>
> According to article 8 of the statute* of the Nobel endowment fund, every proposition must be explained and accompanied by the papers and documents upon which it is founded. According to article 3, every document, in order to be admitted to the competition, must have been published by the public press. For further information, persons qualified are desired to address the Nobel committee of the Norwegian Parliament, Victoria Terrassee 4III, Christiania.

SHIPPING ON THE RHINE.

A register of the boats plying on the Rhine River has recently been issued and contains some interesting statistics showing that wooden ships are fast being superseded by iron ships in river as well as in other transportation. While during the years 1884 to 1892 the number of wooden ships increased from 4,073 to 4,807, this number decreased to 4,095 in the ten years from 1892 to 1902. The number of iron ships rapidly increased from 694 in 1884 to 1,723 in 1892 and to 4,296 in 1902. The carrying capacity of the wooden boats increased on an average from 3,090 cwts. to 3,190 cwts. from 1884 to 1902, and that of the iron boats from 9,404 to 11,571 cwts. The number of iron boats, the carrying capacity of which ranged between 15,000 and 47,000 cwts., increased from 60 in 1884 and 410 in 1892 to 1,108 in 1902, while in wooden boats the number of larger boats greatly declined. The number of men employed on the boats plying on the Rhine has also greatly increased, namely, from 12,795 in 1884 and 17,094 in 1892 to 21,860 in 1902. The number of steamboats increased from 467 in 1884 to 1,183 in 1902, and the horsepower of their engines from 28,553 to 243,499. Of the total number of steamboats, 1,007, with 146,438 horsepower, were propeller boats in 1902, as against 307, with 10,338 horsepower, in 1884, and 176, with 97,065 horsepower, were side-wheelers in 1902, as against 160, with 18,215 horsepower, in 1884.

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*For rules and regulations see ADVANCE SHEETS No. 841 (September 24, 1900); CONSULAR REPORTS No. 243 (December, 1900).

WALTER SCHUMANN,

MAINZ, *September 22, 1902.* *Consul.*

INDUSTRIAL SCHOOL AT TOURCOING, FRANCE.

Under date of September 24, 1902, Consul W. P. Atwell, of Roubaix, writes as follows:

The industrial school at Tourcoing is under the patronage of the chamber of commerce. Its object is to give a degree of technical instruction to the sons of manufacturers and merchants that will enable them to aid in the management of the business and in time to assume the entire direction, and also to give theoretical and practical instruction to workmen which will fit them to be foremen, head mechanics, overseers of spinning and weaving mills, accountants, and correspondents. The course of instruction, which is given to both day and evening classes, includes:

Theory and practical work of spinning; weaving and pattern drawing (sketching and putting on cards); study of threads (distinctive character of textiles) and practical work; applied mechanics (technical working of metals, machinery); industrial physics; electro-technics; geometrical drawing applied to machines; commercial and bank accounts; commercial and industrial law; commerce and merchandise; stenography and typewriting. The studies in each branch extend over one year, except in weaving and pattern drawing; in these classes, a special course in decorative composition and creation of fabrics is given, occupying a second year. This course includes drawing from living plants, elements of water coloring, study of decoration in every century, character of styles, creation of designs applied to tissues, with preparation for examination as art workmen. The annual cost of the day course for French students is 300 francs ($57.90) for the spinning and commercial course and 400 francs ($77.20) for weaving. Foreigners pay double, and a reduction of 100 francs ($19.30) is made for pupils taking a double course, and 200 francs ($38.60) for those taking three courses. The night classes are organized for pupils living or working in one of the Tourcoing districts. A registration tax of 2 francs (39 cents) is required for the first year, 5 francs (97 cents) for the second, with an additional payment of 3 francs (58 cents) for samples and sundries the first year in the theory class, 4 francs (77 cents) the second year, and 5 francs (97 cents) for the third. The registration tax for the course in electricity is 3 francs (58 cents) the first year and 5 francs (97 cents) the second. The course in conducting steam heaters is 2 francs (39 cents) registration tax and 1 franc (19.3 cents) for the course in machine drawing. The registration tax is required of pupils in the commerce classes independent of any other course they may take, which is 3 francs (58 cents) for stenography. Pupils not residing within the limits of Tourcoing pay a tax of 10 francs ($1.93) per month in addition to the cost of samples and sundries for the privilege of attending the night classes. Application for admission may be made to the director of the school, 66 rue du Casino, Tourcoing. Classes begin October 1.

In addition to the Tourcoing school, there are two superior technical schools in Roubaix and one in Lille.

NOTES.

Bicycle Trade in the Netherlands.—Consul-General S. Listoe sends the following from Rotterdam:

The prospects for the importation of American bicycles are not very bright at present. Dealers who formerly purchased thousands of American bicycles bought none this year. This is principally owing to the fact that the manufacture of cycles has progressed very much in this country, and that a cycle can now be built (principally from imported parts) as cheaply and, it is claimed, as well as in the United States. There is still some demand for high-grade American cycles of well-known make, which are thoroughly introduced here, but they are not asked for as much as formerly; the demand is for the cheaper goods, and the public, as a rule, is no longer willing to pay fancy prices. The freight charges and the duty on bicycles (5 per cent of the value), amounting together to about $2 per cycle, or with packing charges to about $2.50, are disadvantageous to the American bicycle, as this margin makes the importation next to impossible, the cost price of the goods at the factory here being about the same as it is in the United States.

In the construction of bicycles here, American parts are largely used, and the imports are, as I have been informed by large importers, steadily increasing. No statistics exist in the Netherlands as to the quantity imported.

New Coal Fields in Belgium.—Consul A. A. Winslow sends the following from Liege, October 15, 1902:

In a report published in ADVANCE SHEETS of CONSULAR REPORTS, December 7, 1901,* I noted the discovery of a new soft-coal basin in the province of Luxemburg, north of this city. Since then, extensive soundings have been made over a considerable territory. The deposit underlies many square miles of the northern part of Belgium and the southern part of Holland. One of the veins, at a depth of from 1,000 to 1,500 feet below the surface, is from 15 to 17 feet thick, and of a very fine quality of coal. It is estimated that this new field contains more than 500,000,000 tons of a good grade of coal, and extensive preparations are being made to open up the mines. The Government proposes to enlarge the canals in that part of Belgium, dig new ones, and open new lines of railroads. The working of these mines will be more difficult and expensive than of the other mines of Belgium, because of their depth and the presence of more water; but it is thought this will be more than counterbalanced by the thickness of the veins. The development of this field offers a fine opening for the introduction of up-to-date coal machinery. The manufacturers of this class of machinery in the United States should take advantage of this opportunity.

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* Also in CONSULAR REPORTS No. 256 (January, 1902).

Signal for Electric-Car Crossings in Leipzig.—Consul B. H. Warner sends the following from Leipzig:

Until a few months ago, the method in vogue in this city of avoiding accidents at crossings of electric street railways was either to station a flagman at the crossings, or to have the conductor run forward to see if the other line was clear. An automatic signal lantern has been introduced by the street railway company, which does away with these inconvenient methods. The lantern consists of two boxes, arranged one above the other, each having two sides fitted with red and the other two with green glass, the red being above the green. The cars on one line cause the incandescent lamps in the upper box to burn; the cars on the other line, the lamps in the lower one. This causes, owing to the arrangement of the glass in the boxes, a green light to appear to the first line, which indicates "free passage," and a red light to the second line, which means "stop." Signals are also visible in day time, as reflectors shut out the light of the sun, and the lantern is well lighted from the inside.

Export of Russian Kerosene to the East.—Commercial Agent R. T. Greener writes from Vladivostock, August 2, 1902:

The East Asiatic Lloyd reports that Russia's policy in the Far East, to lessen the import of foreign goods by abolishing free ports and introducing customs at Vladivostock (where matters go on much the same as before), is not a success. It also confesses that the expectation of an increase in the import of Russian kerosene from the Caucasus into eastern ports has not been fulfilled. From trade returns of China and Japan for 1899, 1900, and 1901, it is shown that the import of Russian oil in these countries has decreased, while American oil has actually doubled.

The Nova Vremya says that the Chinese Eastern Railroad has decided to organize the sale of Russian kerosene in the Far East on a scale calculated to capture the market. The president of the company will build at Dalny a central distributing station, with a capacity of 1,500,000 poods (54,000,000 pounds). A special tank steamer will bring the oil from Batum. At the most thickly inhabited places, at mouths of rivers, at steamship landings, and along the line of railway, substations will be erected, obtaining their supplies from Dalny.

The Khabarovsk-Sretensk Railway.—Consul-General Holloway writes from St. Petersburg, October 4, 1902:

The important extension of the Trans-Siberian Railway from Khabarovsk to Sretensk has been completed from the first-mentioned terminus to Mikhailovo-Semenovskaya, a distance of 226 versts (149.8 miles). The most difficult part of the enterprise—the crossing of the Khingan mountain range—will now be commenced, and will give considerable trouble to the engineers. In order to hasten the completion of the whole line, which will cover a distance of 1,126 versts (746.5 miles), the constructive work between Sretensk and Pokrova, from which place the track will run direct to Blagovestchensk, will be immediately begun. The cost of the new Khabarovsk-Sretensk Railway is estimated at about 9,300,000 rubles ($4,789,500), but that figure, it is claimed, will be largely exceeded in consequence of the constructive difficulties in the Khingan range.

Japanese Ginseng Trust.—The Department has received from Minister H. N. Allen, of Seoul, under date of September 17, 1902, a clipping from the Japan Daily Mail in regard to a ginseng trust that is said to have been formed in Japan, with the cooperation of the Japanese syndicate that at present controls the Korean output of the root. The article says:

> It is stated that a ginseng trust has been formed. The production of this root is not large. Korea gives 50,000 pounds, America, 20,000, and Japan, 40,000. There is a very great difference in price. The Korean Government, by uniformly maintaining a State monopoly and carefully controlling production, has managed to keep the price of Korean ginseng at 30 yen ($14.94) per pound. But the Japanese producers do not protect themselves in any way, and the result is that their ginseng brings only 1 yen (49.8 cents). Such is the statement made by a news agency which has supplied an item to Tokyo newspapers, but it is obviously an incomplete statement, for if the quality of the Japanese root were equal to that of the Korean, it is incredible that such a difference as 29 yen ($14.44) per pound should exist as a result of mere middlemen's manipulation. However, Messrs. Oshikura Masayoshi and Sayegawa Jitsutaro, having conceived the idea of a trust, have managed, it is said, to carry it through, and have secured the cooperation of the Mitsui Bussan Kaisha, which controls the trade in Korea.

Manifests for Mexican Ports.—Vice-Consul J. G. Pagés reports from Veracruz, October 7, 1902:

A recent Treasury decision of the Mexican Government provides a fine for the failure of masters of vessels, carrying cargo from a foreign port to the several ports in Mexico, to procure certified manifests for each port for which cargo is destined. It has been the custom of masters to secure one manifest only for the several ports of the Republic, and it has been necessary for the customs officials at the first port of entry to issue certified copies of such manifest for the other ports to be touched. It has now been decreed that when a manifest is brought to the first port of entry, the collector of customs may issue certified copies for the other ports, collecting for each copy $10 gold, or its equivalent at the existing rate of exchange at time of issue at the port of destination, and $5 Mexican currency (about $2 gold), in addition, for each copy, as a fine for failure to obtain separate certified manifests from the Mexican consul at the port of departure.

Lapse of Concession to Honduras Syndicate.—Consul W. E. Alger, of Puerto Cortez, under date of September 23, 1902, reports that on account of the failure of the company styled the "Honduras Syndicate" to carry out the terms of its contract, the concession granted it by the Government (to contract an interoceanic railway, settle the foreign debt, and establish a bank) has lapsed. The syndicate was composed of Americans, and the contract was entered into in 1897.* The syndicate was bound by the contract to construct a bridge over the Ulua River within four years, and having failed to do so, it was expected that the Government would, in May, 1902, take possession of the road. The syndicate has, however, asked for a prorogue; the request was presented to Congress, which adjourned without taking action. It is expected that the matter will be settled at the next session, which will be held this winter.

German Trade-Marks in Morocco.—Under date of September 15, 1902, the Department has received from Consular Clerk G. H. Murphy, of Frankfort, a copy of the report of the Prussian Chamber of Commerce at München-Gladbach. Mr. Murphy calls attention to the following paragraph, of which he sends translation:

Under date of December 5, 1901, this chamber of commerce received from the Minister of Commerce a decree relating to the protection of German trade-marks in Morocco. According to this decree, persons under American jurisdiction and

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*See CONSULAR REPORTS No. 206 (November, 1897).

residing within the district of the United States consular court at Tangier can be held responsible if they misuse German factory marks and trade-marks which have been registered in the United States of America.

If Germans enjoy this privilege, adds Mr. Murphy, it is to be presumed that Americans can, reciprocally, claim protection if their marks, registered in Germany, are counterfeited by Germans residing in Morocco, or in any country where Germany claims extraterritorial jurisdiction.

Germany's Iron Import and Export Trade.—Under date of September 30, 1902, Consul Walter Schumann, of Mainz, says:

During the first eight months of the year 1902, the German iron export business showed a decided increase over the same period of the preceding year, while the imports of iron during the same period are little more than half. Following are the statistics for the first eight months of the years 1898 to 1902:

Year.	Exports.	Imports.
	Metric tons.	*Metric tons.*
1898	1,106,541	320,524
1899	1,031,148	531,038
1900	1,006,189	682,179
1901	1,400,084	303,160
1902	2,080,521	185,410

German Capital in Foreign Countries.—Consul Jno. F. Winter writes from Annaberg, October 3, 1902:

Until thirty years ago, the German Empire was one of the weakest nations financially; but now, instead of being in need of foreign capital, Germany is following the example of England and France, and is loaning and investing money in foreign countries. According to a recent semiofficial statement, there are about $2,000,000,000 of German capital invested in the United States and Mexico. It is estimated that another $2,000,000,000 are invested in Central and South America, some $250,000,000 in Turkey, and about $1,000,000,000 in Africa, Australia, and the Far East. In addition to this, it is claimed that $3,000,000,000 are invested in stocks and bonds in different countries.

German Duty on Paper Napkins.—Consul J. J. Langer reports from Solingen, October 1, 1902:

Paper napkins and paper used for making them are imported by Germany to a considerable extent from Sweden and Austria. Thus far, they have paid duty under the general classification of paper.

Other European countries, however, classify them as stationery, or the same as paper collars and cuffs, the duty on which is considerably higher. The Minister of Trade has asked the Association of German Paper Manufacturers for their opinion of the classification. They believe that paper napkins should be dutiable as stationery, at 10 marks per 100 kilograms ($4.20 per 220.46 pounds), particularly as the paper used for making them is specially prepared and can not be employed for other purposes.

German Substitute for Celluloid.—Consul-General O. J. D. Hughes reports from Coburg, October 11, 1902:

The extensive commercial use of celluloid has caused a great many people to try to find substitutes for, or imitations of, it. In this part of Germany, a popular imitation has been made by dissolving in 16 parts—by weight—of glacial acetic acid, 1.8 parts of nitrocellulose, and adding 5 parts of gelatin. Gentle heating and stirring are necessary. After the mass has swollen, it is mixed with 7.5 parts of alcohol (96 per cent), and stirring is continued. The resulting product is poured into molds, or, after further dilution, may be spread in thin layers on glass. As an underlay for sensitive photographic films, the material has important advantages, not the least being that it remains flat in developing.

German Demand for Cast Spring-Steel Plate.—Mr. J. J. Langer, consul at Solingen, October 1, 1902, writes:

On July 10, 1902, I transmitted a report* concerning the demand for cast spring-steel plate by P. D. Rasspe Soehne, of this place. Thus far, no communications have been received from parties wishing to furnish the desired article. The same firm now submits samples, which I inclose, to show quality, rolling, and hardness of material desired, as used in the manufacture of saws.†

Competition for Military Tractor in Great Britain.—The Department has received from the British embassy, Washington, under date of October 2, 1902, notice that the competition for tractors for military purposes, which was announced for the spring of 1903, will be postponed until the month of October, 1903. Intending competitors should apply in October, 1902, for forms of entry for this competition to the secretary, mechanical transport committee, War Office, Horse Guards, Whitehall, S. W. These forms must be completed and returned to the secretary, mechanical transport committee, not later than January 1, 1903. A notice of this competition, with the regulations, appeared in ADVANCE SHEETS No. 1211 (December 11, 1901) and CONSULAR REPORTS No. 257 (February, 1902).

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*See ADVANCE SHEETS No. 1405 (July 30); CONSULAR REPORTS No. 264 (September, 1902).

†The samples are on file in the Bureau of Foreign Commerce, where they may be examined by parties interested.

Engineering and Machinery Exhibition at London.—The Department has received from Consul-General H. Clay Evans, of London, under date of September 25, 1902, notice of the exhibition of engineering, machinery, hardware, and allied trades to be held at the Crystal Palace from March 2 to May 31, 1903. In a communication from the manager of the exhibition, which is transmitted, it is asked that the attention of American manufacturers be called to this opportunity to introduce their goods and to strengthen their connection with the various markets of the world.

Russian Meat for London.—Consul Marshal Halstead reports from Birmingham, October 2, 1902:

In a recent review of British trade, the London Daily Mail states that the Russian Agricultural Department is reported to be making arrangements to play an important part in supplying the London markets with beef, in opposition to the American meat exporters. It says that special steamers have been built with freezing chambers, the Russian Government assisting by subsidies, and that it is intended they shall ply between a Russian port, via the Kiel Canal, and London, with huge cargoes of fresh meat. Libau is considered a suitable port, as from there the beef can reach London in three days or less after slaughtering.

Waterworks for Crajowa, Roumania.—Consul B. H. Warner, of Leipzig, under date of September 11, 1902, reports:

The city of Crajowa, which has a population of 55,000 inhabitants and is one of the largest and richest cities in the Kingdom of Roumania, has just called for bids for the construction of a plant to furnish its water supply. All bids and proposals should be addressed to the mayor, Nicolas P. Romanescu, Crajowa, Roumania. A copy (in German) of the official specifications is inclosed herewith.*

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*Filed in the Bureau of Foreign Commerce, where it may be consulted by interested parties.

Demand for Pumps in Johannesburg.—Consular Agent Wm. D. Gordon writes from Johannesburg, September 17, 1902:

A considerable market exists here for a high-lift centrifugal pump, having a capacity of from 6,000 to 15,000 gallons per hour. The most common height required would be from 500 to 600 feet. They are usually provided with extension bed plates for direct driving by electric motors. Such machines are now being built in Sweden and Switzerland, and if any manufacturer in the United States makes a competitive machine, I can secure a good connection here for him.

Trade Opening in Natal.—The Bureau of Foreign Commerce has received a letter from C. W. Hewitt, of Ladysmith, Natal, saying that he is contemplating the establishment of a business in general groceries, men's outfitting, books, stationery, etc., and wishes his name brought to the attention of United States exporters of these lines.

Inquiry for American Advertising Novelties.—Consul Marshal Halstead, of Birmingham, under date of September 27, 1902, says:

I have an inquiry for the names and addresses of manufacturers of advertising novelties, foot rules, etc., of the kind given away by business establishments to customers and possible buyers as a memorandum of address and business.

Improvements at Ceiba, Honduras.—Consul W. E. Alger, of Puerto Cortez, under date of September 9, 1902, says:

In addition to my report of September 1,* in regard to the Industrial Company, of Ceiba, I have to state that the company has contracted with the Government to bring water into the town of Ceiba, to establish an electric plant for lighting, and to manufacture ice and aërated waters for a period of ten years. Any information in regard to the company can be obtained from the secretary, A. Disdier, of Ceiba.

Stamps and Coins for Honduras.—Consul W. E. Alger reports from Puerto Cortez, September 16, 1902, that the Government of Honduras has decided to have its postage stamps and postal cards engraved abroad this year, and the work is to be done in the United States. It has also sent to Philadelphia and arranged for a supply of silver coin to be minted.

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*ADVANCE SHEETS No. 1447 (September 18, 1902).

Duty on Salt in Haiti.—Consul-General J. B. Terres writes from Port au Prince, September 25, 1902, that, according to a recent decree, the collection of the duty on salt imported has been suspended from September 24 to December 31, 1902.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) have been transmitted since the date of the last report to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
H. W. Diederich, Bremen	Oct. 9, 1902	Emigration via Bremen	Bureau of Immigration.
T. H. Haynes, Rouen	Oct. 14, 1902	Prunes	Department of Agriculture.

FOREIGN REPORTS AND PUBLICATIONS.

The Economic Metamorphosis of Rome.—The following is taken from a British consular report, No. 2896, annual series:

> The ambition of those who are interested in the welfare of Rome, which is mainly directed toward the transformation of this hitherto consuming center into a productive one, is gradually and steadily taking a more tangible form. Government, provincial, and municipal aid is not lacking toward that end, and hopes are entertained that Rome may at an early date be able to vie in point of industry and commerce with her more prosperous northern sisters—Milan, Genoa, and Turin. A few years ago, the Italian capital was entirely dependent upon other districts for almost all her supplies, but with an increasing population, which has now reached about 500,000, and with the reviving general economic conditions of Italy, the old city was bound to take rank with other European capitals. Visitors who have not been in Rome for the last twenty years can scarcely recognize it. Suburbs have risen over the vineyards outside the city walls, old quarters have been superseded by large and commodious buildings; the Tiber is permanently embedded all along its urban course between two gigantic embankments on which fine houses, overlooking the river, have been constructed; solid granite bridges, meant to defy the ravages of time and the impetus of the once dangerous Tiber, have been thrown across the two embankments; new and wide thoroughfares have been opened; in one word, the city has been completely modernized and rendered in all respects quite sanitary, as shown by the returns of mortality. These facts, coupled with the traditional courtesy of its inhabitants, render Rome a most agreeable and healthy place to sojourn. Extensive excavations have been lately undertaken by the Government, especially in the area of the Roman forum.

As for the lines in which trade may be extended, the report says:

> Manufacturers of agricultural and electric machines and implements, cycles and motor cars, by sending a smart representative, might secure fairly remunerative orders. The demand for typewriters is increasing, and would increase still more if a cheap machine could be placed on the market. The system adopted of trying to push trade here by means of local agents is recommended only after a personal visit of one of their representatives, who, after completing a tour round the district and studying local requirements, should start the agency in Rome; but there is no room for foreign teachers, clerks, and accountants.
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> The topographical position of Rome and its hilly thoroughfares must necessarily induce the public to take advantage of the cheap and rapid means of conveyance offered by the electric trams. Another factor of prosperity is the vast amount of electric power which is yielded by the Tivoli waterfalls, a source of wealth to Rome and to the enterprising pioneer concerns which have taken advantage of them, such as the Roman Tramways Company. The supply of power from the Tivoli Falls is so abundant that electric installations are gradually superseding every other system of illumination. Rome and the neighborhood are provided with a most extensive supply of very pure water. Every landlord in Rome is bound by the municipal regulations to supply his house with a certain quantity of water proportionate to the number of presumable tenants, and the scale of supply is higher than that of any other European town.

Forestry in Russia.—The following extracts are taken from an official report recently published by the Russian Ministry of Agriculture and Domains:

The forests of Russia are of such immense extent that it is only possible to estimate approximately those of Russia in Europe and the Caucasus. The former, exclusive of Finland, which has 18,700,000 dessiatines (50,484,390 acres), and of the lakes and marshes they inclose, has 151,000,000 dessiatines (407,654,700 acres). Sixteen per cent of the area of the Caucasus, or 19,351,408 acres, is forest land. The distribution of these lands is most unequal. Northern Russia is well wooded, while the southern steppes are almost entirely destitute of trees. The State is the principal owner of Russian forests, the area of its forests being figured at 110,967,819 dessiatines (299,579,819 acres), including those of the Caucasus. The woodlands conceded to the peasants at the time of their freedom have not yet been separated from the Crown lands. Two-thirds of the Crown lands are comprised in the two provinces of Archangel and Vologda. Forests belonging to private individuals are estimated at 35,998,861 dessiatines (97,186,125 acres), and those belonging to communes of peasants at 21,539,222 dessiatines (58,149,468 acres).

The vast territory of the Russian Empire, divided administratively into 98 governments or provinces, must necessarily include an infinite variety of soil and climate and a vegetation in harmony therewith. Its forests contain such well-known species as fir, oak, beech, maple, birch, pine, aspen, larch, black alder, linden, poplar, and elm. The most widely distributed species is unquestionably the fir (*Picea excelsa*), of which the best specimens grow on the table-lands of the north. Some are remarkable for their proportions—116 to 185 feet high, with straight, smooth trunks, well stripped of lower branches, and with a diameter of 56 to 84 inches at the height of a man. These old trees furnish resonant wood for musical instruments. Next in rank in area covered, but of chief importance in forest economy, is the common or wild pine (*Pinus sylvestris*), which grows farther south than the fir. The birch often grows mixed with the pine, and is the most widely distributed of all the leafy varieties. It has great importance in western Siberia, where, in the absence of other forest species, it serves for multiple uses, being even employed for building purposes. Woods of birch scattered on the steppes shelter the neighboring fields from the violent winter winds. Birch trees often present excrescences of a very pretty grain, used for the manufacture of small articles de luxe, especially in the province of Viatka. The aspen is as widely distributed as the birch and its area of growth increases, as it has the property, like the birch, of prospering in grounds previously occupied by other varieties. It thus replaces the fir in the north and the oak in the more southern regions. Under favorable conditions the aspen reaches, at the age of 60 years, a height of 93 feet and a diameter of 14 to 17 inches. The trunk is straight and the wood sound. Where other wood is lacking, it is used for building purposes, and in the north for fuel.

The oak is found much less widely than the preceding varieties. It does not grow in the north of Russia, nor beyond the Ural. The finest oak forests are found in the districts of Minsk, Grodno, Moheelev, Volhynia, Kiev, Nijni-Novgorod, Kazan, Simbeersk, and Veronege. The Crown forests in Moheelev are remarkable for their beauty and value. Oaks two hundred years old are found there, sheltering an undergrowth of elms, the product of the rich, fresh soil. The wood from the trees, of excellent quality, is chiefly sent to St. Petersburg. Newly created railways will allow the exploitation of forests hitherto closed to all markets. The larch, a notable growth of the northern forests, is of great industrial and commercial importance on account of its beautiful trunk and the excellent quality of its wood. The beech, which grows with the fir, has long been valued for the manufacture of bent-wood furniture.

The wood of the linden is used in the manufacture of a great number of articles; the inner bark furnishes hemp for mats, cordage, and woven sacks, and the bark of young lindens furnishes the raw material for an important industry—the manufacture of lapti—the habitual foot covering of the rural population of northern and northeastern Russia.

There were 1,219 sawmills in Russia in 1898, employing 44,000 workmen, with an annual production of 65,000,000 rubles ($33,475,000). The manufacture of wood pulp has scarcely begun, amounting to only $386,250, while the import exceeded $515,000. The furniture industry is especially developed in the provinces of Pitrokov and Varsoie, which make a specialty of beech bent-wood furniture. The output of these two provinces is valued at 2,000,000 rubles ($1,030,000). Joinery, cooperage, and carriage manufacture are other flourishing industries tributary to the forest. The manufacture of matches is especially extended in the forest regions, amounting to 105,000,000 rubles ($54,075,000). The dry distillation of wood occupies about 216 of the smaller rural manufactories, producing tar, pitch, and the essence of turpentine. Besides these large industries, thousands of workmen in the country are occupied in cooperage, making small wheels, kitchen utensils, baskets, etc. In the district of Nijni-Novgorod, more than 7,000 persons are engaged in making spoons of birch wood; and it is estimated that 100,000 families are employed in these small industries.

The preservation of forests in Russia and their economic development has long occupied the attention of her statesmen. In 1888, a law was made which aims at the preservation and maintenance of forests. All forests exercising influence on the natural conditions of the country are placed under the protection of the State. They are freed from land imposts, and the Government manages them at its own expense. The department of forestry is under the Ministry of Agriculture and Domains, with a general director at the head, assisted by two vice-directors. The forest personnel is recruited from the schools; there are two superior and thirty secondary schools, with a two-years' course of instruction. Certain agricultural societies have special forest sections. Three trial establishments have been created in southeastern Russia, to determine the influence which the planting of trees on the steppes would have on the agricultural and economic conditions of the region. The tendency is not to plant in solid masses, but in straight lines, either from north to south or from east to west, as the local conditions demand.

Rhodesian Railways.—According to the London Daily Mail of recent date, a contract for the immediate construction of a branch of standard-gauge railway to connect Selukwe with the main Salisbury-Bulawayo line has been signed, and work will be commenced at once.

A branch line of standard gauge from Salisbury to the Mazoe district has been decided upon, and the survey will be made immediately. The Rhodes trustees have approved the immediate construction of a line of railway to connect Bulawayo with the Matoppos. The Vryburg-Mafeking section of the main line from the Cape to Bulawayo—100 miles in length—which was originally laid with lighter rails than those used for the rest of the system, will be relaid with heavy rails.

Arrangements have been made to push on the main line north of Bulawayo as rapidly as possible, and it is expected that the Wankie coal fields will be reached before June next year. Thence, the road will be pushed to the Victoria Falls.

Commerce of French Guiana in 1901.—According to La Quinzaine Coloniale, Paris, October 10, 1902, the general movement of commerce in French Guiana in 1901 was represented by the following figures:

Description.	1901.	1900.	Increase.
Imports	$2,358,298	$1,884,074	$474,224
Exports	1,693,698	1,270,618	423,080
Total	4,051,996	3,154,692	897,304

This increase is largely the result of the recent discoveries of gold mines at Quini, and of the introduction of a considerable quantity of goods for public works. The governor of French Guiana gives in his report the following particulars respecting the gold mines:

Description.	1901.	1900.
Concessions being worked.....number	496	133
Area.....acres	268,188	148,025
Ore extracted.....pounds	8,865	5,243
Ore extracted.....value	$2,095,573	$1,239,424
Ore exported.....pounds	6,455	4,859
Ore exported.....value	$1,537,469	$1,235,267

Few of the concessions are well organized, making it impossible to give the exact number of workmen employed. The figures showing the quantity of gold produced and exported are taken from the customs' declarations, and are therefore approximate, as miners are not required to keep a record of the quantity produced.

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